The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 107, No. 9 — COPYRIGHT, 1936, BY AMERICAN MEDICAL ASSOCIATION CHICAGO, ILLINOIS — AUGUST 29, 1936

THE EARLY TREATMENT OF POLIOMYELITIS AND THE IMPORTANCE OF PHYSICAL THERAPY

CHAIRMAN'S ADDRESS

ARTHUR T. LEGG, M.D.

BOSTON

The recent outbreak of poliomyelitis in Massachusetts has brought to my mind again the necessity of stressing the importance of good after-care. Previously I have written and said a great deal on general follow-up treatment. Now I should like to bring out the benefits to be derived from a long period of competent treatment; namely, the prevention of deformities and the regaining of muscle power.

As soon as the first or acute stage is over, that is, when the temperature has returned to normal and the muscles have shown definite paralysis or weakness, orthopedic treatment should begin immediately; for it is then that contractures must be and can be prevented by holding the various affected parts in a neutral position, thus stopping all strain on the affected muscle.

In immobilizing the legs and arms, one must remember that the neutral position should not be held so continually, or the joints may become stiff. I recently saw a pathetic example of this. A boy whose onset of poliomyelitis was in August 1935, with involvement of the legs, had had solid plasters put on both. They were kept on for six months with the result that when they were removed the knee joints had so stiffened that it was possible to get only a few degrees of flexion in either knee.

For this immobilization, I prefer for the legs posterior wire splints or bivalved plasters; they hold the legs in a neutral position but can be removed easily. I make it a rule to remove the posterior wire splints twice a day and let the patient flex his knee if he can. If he is unable to do this, it should be done manually within the limits of sensitiveness.

With deltoid and arm involvement, simple wire splints may be made to hold the arms in abduction with the elbows flexed or extended according to the involvement of the biceps and triceps while the patient is recumbent; that is, holding the arm in extension if the triceps is weak or in flexion if the biceps is weak, or part time in flexion and part time in extension if both are weak. When the patient is over the recumbent stage and is allowed to sit up, the arm should still be kept up on an abduction or platform splint to support the deltoid. If there is any involvement of the trunk muscles, these also should be supported by a corset.

Read before the Section on Orthopedic Surgery at the Eighty-Seventh Annual Session of the American Medical Association, Kansas City, Mo., May 13, 1936.

Sensitiveness of the patient should be relieved as soon as possible in order to start muscle training. I have found that hot wet packs and hot baths given two or three times a day for fifteen minutes help best to shorten this stage. Dry heat may be applied, but it is my experience that moist heat is more effective. I often have patients put in the Hubbard tub even before the sensitiveness is entirely over with the water at 100-104 F. to take the place of a hot pack and allow the patient some slight movement to prevent the stiffening of the joints.

At the same time rest is essential and patients should be moved as little as possible.

No muscle activity should be allowed until this stage of sensitiveness is over, and then a complete muscle examination should be made and muscle training can be started. Fatigue of the involved muscles must be carefully watched for, lest in becoming overtired they become weakened.

Rapid regaining of power in one group of muscles over its opposing group will necessitate changes in exercises to prevent unbalance; therefore frequent muscle examinations must be made in order that a true and complete muscle picture of the whole limb may be visualized at all times, to guide correct muscle training. It is my rule to make a complete muscle examination every month for four months, every two months for two examinations, every four months for five years, and then every six months.

I mention here the under water treatment of poliomyelitis. From the buoyancy of the water patients are relieved of the influence of gravity and friction, making it possible to do exercises much more easily than out of water. This affords a sense of accomplishment out of proportion to the actual ability of the weakened muscles, which stimulates the interest and effort of the patient. A wider range of activity other than table exercise is possible without strain. This diversion lessens the possibility of going stale during prolonged treatment. Body balance is learned more easily and walking may be practiced much earlier than outside. This benefit is eventually carried over out of water and prepares the patients for the adjustment of learning to walk in braces.

When shall patients with involvement of the legs be allowed to walk? Patients who with only moderate weakness are making constant gain in muscle power should be, I believe, kept off their feet for a long time, even nine or ten months, since if they are allowed to walk it will be impossible to control their activities. They will overdo and show a loss in muscle power from fatigue. If a patient, however, with moderate or extensive weakness shows but little or no return of power, I believe that braces should be applied even after six or seven months.

Many physicians are too prone to leave the treatment of poliomyelitis patients to their physical thera-

pists. Some are capable of taking this responsibility, but I feel that it is important that the physician assume the entire supervision of the case throughout its course.

Having discussed the importance of immediate and thorough after-care, I shall present the information I have collected from my clinic cases concerning the amount of benefit derived from a long period of after-care. I shall show that treatment after even five years is not just a preventive treatment. By that I mean that it is not just to prevent deformities due to muscle contractures, which is reason enough to continue treatment, but that even after five years definite gain in muscle power still can be made. I am using the figures compiled from the cases in which the onset occurred in 1927. There were 496 cases reported to the Harvard Infantile Paralysis Clinic the onsets of which were in 1927. Of these 496 patients, by Jan. 1, 1934, 167, or 33.6 per cent, had been discharged or left practically normal or normal; sixty-eight, or 13.7 per cent, left or were discharged for noncooperation and were not normal; ninety-seven, or 19.7 per cent, had moved, had died, or had been transferred elsewhere for treatment; 164, or 33 per cent, are still under my supervision at the clinic.

Of these 164 cases, 109 are omitted because they were operative cases and I am measuring gain only in muscle power; therefore the cases are limited to fifty-three.

These fifty-three cases are divided into three classes of treatment, good, medium and poor. In classifying these cases I have taken into consideration records of attendance to the main and field clinics, and faithfulness of home treatment. The latter information is based on the report of the family and the physical therapist.

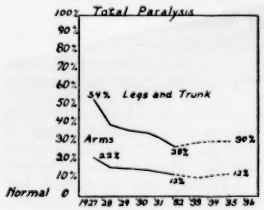


Chart 1.—Result of good and poor treatment in a case of arm and leg involvement. C. P., a girl aged 3 years; onset in September 1927. Solid line, good treatment; broken line, poor treatment.

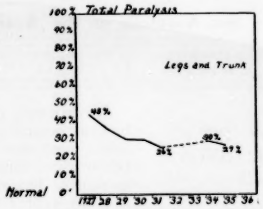


Chart 2.—Course in a case in which treatment was given for four years, interrupted for two years and given for two years. L. S., a boy aged 9 years; onset in July 1927. Solid line, receiving treatment; broken line, not receiving treatment.

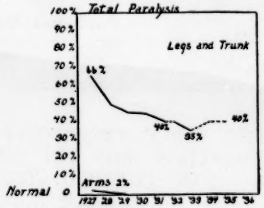


Chart 3.—Course in a case receiving and not receiving treatment. A. P., a girl aged 2 years; onset in September 1927. Solid line, receiving treatment; broken line, not receiving treatment.

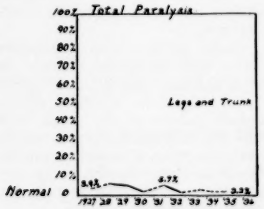


Chart 4.—A case with poor and good treatment. F. T., a boy aged 1 year; onset in September 1927. Solid line, good treatment; broken line, poor treatment.

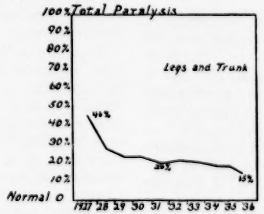


Chart 5.—A case with good treatment for eight years. J. S., a boy, aged 7; onset in September 1927.

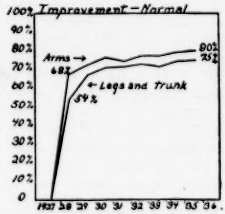


Chart 6.—Yearly percentage and rate of improvement in fifty-three cases.

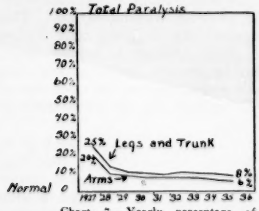


Chart 7.—Yearly percentage of involvement in fifty-three cases of paralysis of the legs, arms and trunk.

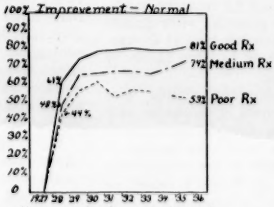


Chart 8.—Yearly percentage of improvement in paralysis of the legs and trunk with good, medium and poor treatment.

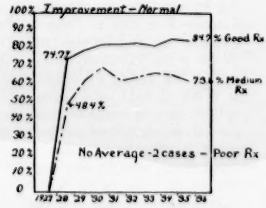


Chart 9.—Yearly percentage of improvement of the arms with good and medium treatment.

In getting the percentage figures of the average amount of involvement, I graded the muscles as follows:

A normal muscle was graded 0 paralysis.
A good muscle was graded 1 paralysis.
A fair muscle was graded 2 paralysis.

V 107
1936

A poor muscle was graded 3 paralysis.
A trace muscle was graded 4 paralysis.
A gone muscle was graded 5 paralysis.

The total number of muscles of the legs and arms left and right according to the 1927 muscle charts equal forty-six. Therefore, if each of the forty-six muscles was graded a "gone muscle," total paralysis of the legs and trunk would equal five times forty-six, or 230. The same holds true with the arm muscles, total paralysis equaling 290. A yearly muscle examination of each case was figured on this basis.

On the graphs it will be seen that good treatment is shown by a solid line and poor treatment by a broken line. It is of interest to note that, as soon as treatment was discontinued, muscle power weakened even after five years of care; after a return of the same cases to steady treatment, muscle power gained even in the ninth year after onset. This is shown by charts 1, 2 and 3.

In chart 4 the patient showed increased muscle weakness during the first year with no treatment, which is, though perhaps not a common occurrence, at least contrary to the opinion that all cases will improve at first regardless of treatment.

Chart 5, of a patient receiving good treatment steadily for nine years, shows an absolutely steady gain in muscle power right on to 1936.

The averaging of these fifty-three cases proves to my mind that steady follow-up treatment is not only beneficial in preventing deformities but equally important in positive increase in muscle power.

Here the graphs read as 0 improvement at the bottom of the graph, which would be the first examination, and 100 per cent improvement, or normal, at the top. Therefore chart 6 shows that the legs and trunk, over a period of nine years, improved 75 per cent on an average and the arms 80 per cent. It is of great interest, I believe, to see that the average goes slowly but steadily up toward normal even in 1935, nine years after the onset. In other words, the average paralysis of the legs and trunk, which at onset was 25 per cent, dropped down to only 8 per cent and the arms from onset of 20 per cent paralysis to 6 per cent paralysis (chart 7).

But, definite as these averages are, the division of the cases into good, medium and poor treatment and their according averages leaves my mind without a doubt that correct and steady follow-up care is of tremendous importance long after the onset (charts 8 and 9). They show the average yearly percentage of improvement of the legs and arms according to their class of treatment. Patients with leg and trunk paralysis receiving good treatment improved 81 per cent in nine years, patients receiving medium treatment improved 74 per cent, and those receiving poor treatment improved but 53 per cent. The arms improved in about the same proportions. Patients receiving good treatment improved 84 per cent; those receiving medium treatment improved but 73.6 per cent. There were two poor treatment cases which would not make a true average and are therefore omitted. Charts 8 and 9 not only have shown the importance of long continuous treatment but also refer back to the first point: the importance of immediate good treatment.

During the first year, patients with leg and trunk paralysis receiving good treatment improved 61 per cent, those receiving medium treatment only 48 per cent, and those receiving poor treatment but 44 per cent. Again the arms show the same, the patients receiving good treatment improving 74 per cent and those receiving medium treatment but 48 per cent in the first year.

There is some spontaneous recovery of muscle power following an attack of poliomyelitis, owing to the edema of the cord. Many patients severely weakened or paralyzed make a very rapid and often complete recovery of muscle power even without treatment. It is my belief that there is no spontaneous recovery after six months. Late return of power may occur when a muscle has been put out of commission by more rapid recovery of its opponent and contracture. This being relieved, the muscle will immediately come back to power.

SUMMARY

Complete rest and immobilization with limbs in the neutral positions should be insisted on as soon as the paralysis or weakness occurs, to prevent contracture and to aid in the relief of the sensitive stage. A complete muscle examination should be made as soon as the sensitive stage is over and from this the muscle training should be planned. A careful check up on the gain or loss of muscle power should be made at definite intervals. The careful check up on the muscles affected should be carried out for years.

I believe my graphs show conclusively that while the greatest rate of gain is in the first year, with treatment a real progress can be made over a long period of years.

319 Longwood Avenue.

TEACHING PSYCHIATRY IN THE MEDICAL SCHOOL GENERAL HOSPITAL

A PRACTICAL PLAN

EDWARD G. BILLINGS, M.D.
Assistant Professor of Psychiatry and Director, Psychiatric Liaison Department, University of Colorado and School of Medicine and Hospitals
DENVER

The 1932 survey of sixty-eight medical schools in the United States and Canada, made by Ebaugh[1] for the National Committee for Mental Hygiene, indicated that 42 per cent of schools had not, at that time, developed clinical facilities for general psychiatric teaching, and that only eight schools had developed psychiatric liaison with the clinical departments of the general hospital. Unquestionably, many schools, since this survey was made, have begun developing more adequate facilities for training the medical student and intern in the diagnosis and treatment of the relatively large number of psychiatric cases commonly coming to the general practicing physician (generally estimated at from 35 to 75 per cent of the general physician's patient load). Suffice it to say that, since the present-day trend of modern medicine is toward a more firm coalescence of the fundamental scientific principles, clinical procedures and teaching methods of psychobiology and psychiatry with those of other departments of medical schools, the general hospital is being and will continue to have to be used more and more as a medium of procedure.

Such liaison projects in general hospitals are, however, relatively few and naturally differ considerably in

The Psychiatric Liaison Department is a part of the Department of Psychiatry, Colorado University School of Medicine, financed by the Rockefeller Foundation.

1. Ebaugh, F. G.: Psychiatric Education in America, a Confidential Report to the National Committee for Mental Hygiene, 1932.

their working methods, depending on the many situational factors among which they are developed. The experiences of others have been exceedingly helpful in organizing and developing such an enterprise in the University of Colorado General Hospital. It is with this in mind that this exposition of the development of the Psychiatric Liaison Department of the University of Colorado Medical School and Hospitals is offered, in the hope that our experiences may give a modicum of helpfulness to those just beginning, or about to begin, similar work. In this paper no attempt is made to do more than sketch the general situation, some of the more prominent objectives, the mode of procedure and the difficulties and successes.

THE SITUATION

The University of Colorado School of Medicine and Hospitals, which is located in Denver (population 287,861), the capital of the state of Colorado (population 1,035,791), gives all four years of medicine and accommodates fifty students per class. The group of buildings serving the school includes a medical school building which is connected with the State General Hospital of 150 beds, and an outpatient wing that houses some twenty clinics. Uniting these is a central administration building in which are located the school administrative offices, the library of some 19,000 volumes and 321 current journals, a museum, an amphitheater, centralized laboratory and research units, and the Child Research Council under the directorship of Dr. Alfred H. Washburn. The State Psychopathic Hospital of eighty beds occupies a separate building adjacent to the school and the General Hospital. The physical set-up is not far different from that of the average medical school and state general hospital except for the excellent psychiatric facilities which are to be had in the Colorado Psychopathic Hospital, under the direction of Dr. Franklin G. Ebaugh.

During the past three years the average yearly admission rate to the General Hospital was 4,366. To the outpatient dispensary there came 9,448 new cases, and a total of 57,900 return visits were made during the year 1934-1935.

Prior to mid 1934, the psychiatric problems in the Colorado General Hospital and Dispensary were seen by the staff members and Commonwealth Fellows of the Psychopathic Hospital. This consultation service, over a period of eight years, did much to pave the way for the more recent ingrowth of psychobiology and psychiatry in the thinking and activity of the medical-surgical fields of this locus. In September 1934 a grant by the Rockefeller Foundation made possible the organization of a full time department of psychiatry in the General Hospital wards and dispensary. This department is called the Psychiatric Liaison Department of the Colorado General and Psychopathic Hospitals and is manned by a full time staff consisting of the psychiatrist, a social service worker and a secretary. A Commonwealth Fellow from the Psychopathic Hospital serves as the psychiatrist's assistant on a three months part time basis. It is concerning the development and functions of this liaison department during the past eighteen months that the present report is made.

AIMS AND OBJECTIVES

The not atypical attitude of "I'm from Missouri" on the part of the General Hospital visiting staff, resident staff and students, and the feeling that psychobiology and psychiatry are not for the "general man" prevailed at the inception of this liaison project. This feeling of apparent skepticism on the part of nonpsychiatrists might have been taken as a confronting difficulty. It was interpreted as one of being willing to be convinced that psychiatry could be used practically and advantageously in a general hospital. It therefore seemed imperative that the program be demonstrative and not one of mere "preaching." We have found that such a program is of the greatest importance in creating a curiosity on the part of the nonpsychiatrist and leads to a spontaneous search for facts with an emotional as well as an intellectual acceptance of them.

With this type of program to be undertaken, the utilization of limited and narrow aims seemed somewhat hazardous. In a general hospital the psychiatrist constantly has to maintain the clinical perspective of his nonpsychiatric colleagues as well as that of his own particular specialty and cannot possibly anticipate an amalgamation, such as has been referred to, by starting with a horizon contracted to a mere interesting case or a lone special project. It seemed essential, therefore, that our aims be formulated for realization far in the future and that any objectives to be undertaken in terms of the present or near future must always fall in line with them and at the same time be fluid enough to fit the ever changing situation.

The department was organized around and developed on three rather broad aims which we hope will prove adequate:

1. To sensitize the physicians and students to the opportunities offered them by every patient, no matter what complaint or ailment is present, for the utilization of a "common sense" psychiatric approach for the betterment of the patient's condition, and for making that patient better fitted to handle his problems—somatic or personality determined or both.

2. To establish psychobiology as an integral working part of the professional thinking of physicians and students of all branches of medicine.

3. To instil in the physicians and students the need the patient-public has for a more tangible and practical conception of personality and sociological functioning. This, not so much in the sense of "prevention" of mental and personality disorders, per se, but rather in the sense of prevention of false thinking, misconception, misunderstanding, folklore and tabus, which make it difficult for the patient to accept help or to allow the physician to be of help.

A CONFRONTING ATTITUDE; PROCEDURE; SOME GENERAL RESULTS

To the beginning intern in and the visiting physician to a general hospital, the first evaluation of the importance of a new clinical department is based, seemingly, on case turnover. If the psychiatrist picks his cases or in any way designates what is or is not "his case," the project loses the interest of his confrères. During the first year the department took "everything" referred. Of this case load, on thorough examination, approximately 12 per cent of the patients were found to have some body disorder either purely incidental to and playing no rôle in the psychiatric problem present or presenting only a minor contributive part. Between 5 and 6 per cent of the cases referred as presenting "functional" problems during that year proved not to be psychiatric disorders but real somatic disease, ranging from pulmonary tuberculosis, cholecystitis and pes planus to brain tumor, which had been entirely overlooked because the case somewhat resembled a psychiatric one and usually was designated by such terms as "hysteria" or "neurasthenia." These cases unassumingly examined, diagnosed, formulated and for which treatment, in keeping with medical opinion, was

V 107
1936

outlined, did a great work in stimulating the internist, surgeon and student to look further before referring his patients. The result has been that in looking further the nonpsychiatrist has asked for aids in studying personality, has used them and finds that in employing them he gets the "feel" of so-called functional personality disorders. This, then, paves the way for a better and more acceptable assimilation and utilization of the content of the case formulations, which the department, as time goes on, endeavors to make more complete and instructive for the referring physician. In regard to these formulations, we try to fulfil four obligations: first, to arrange and group the complaint of the patient so that it presents a clear and concise verbal picture, second, to evolve the complaint in a simple but clear fashion to sound plausible and sensible and to stimulate an urge to know more of the details, third, to avoid nosologic psychiatric diagnosis in favor of a summarizing sentence or two that neutralizes any antipathy that might exist for "big words," and, fourth, to outline treatment in as clear, concise and all encompassing a manner as is possible, pointing out dangers and difficulties and ways of evaluating success. Through progress notes written after each treatment interview with the patient, as well as through discussions with the attending doctor, the physicians are kept informed as to methods, attainments and failures.

The result is that ordinary deliriums, mild depressions, simple anxiety syndromes and the like are being competently handled more and more by students, interns and the visiting physicians. Furthermore, potential personality reactions such as postoperative excitement, delirium, panic, early depressions, schizophrenic reactions and some of the "part disorders" (i. e., psychoneuroses) are being recognized by them. Thereupon the psychiatrist is called in to collaborate on the medical, surgical or obstetric procedures best fitted to avoid stirring up more profound disorders and for ameliorating those existent. For example, the ophthalmologist now often calls for the psychiatrist to assist him in determining whether a visual disturbance is a result of a combination of refractive error and a physiologic phenomenon of a tension state and, if such exists, whether refraction should precede or follow the psychiatric job of ameliorating the tension. Or the gynecologist, for instance, is beginning to ask for assistance in deciding whether a certain patient can or cannot be given douches for a local vaginal condition without stirring up more personality determined pelvic sensations. Thus, one clinician after another has learned to avail himself of the department, so that at the present time our clinical material is drawn from 61 per cent of the outpatient clinics and from all the wards of the General Hospital.

PSYCHIATRY IN THE OUTPATIENT DEPARTMENT OF THE GENERAL HOSPITAL

In the outpatient department the psychiatrist works each morning in the medical clinic, since more space is available here and because it is from this clinic that most of our referrals come. At least one new case and an average of two to four cases previously examined and under treatment are seen daily. The new cases, despite the fact that they have been examined physically and neurologically, are reexamined in these fields as well as psychiatrically. This keeps the psychiatrist medically minded, makes the referring physician more respectful of psychiatry, and brings the student face to face with the fact that psychiatry and the other branches of medical science cannot be segregated. It is frequently felt that the psychiatrist must have a special and private environment in which to examine his patient. This, of course, is ideal. In our outpatient department, however, we have to work in a booth that is not sound proof. It has been our experience that this condition has helped a great deal in teaching the internist by indirect means, since it is possible for the physician working in the booth next door to overhear the examination and treatment of the case he has referred to us. After the case is examined, our observations are discussed with the referring physician, social workers and any others who are interested. A mutual understanding is reached and treatment is planned. A decision is then attained as to who is to be in charge of the case. Frequently the referring physician wishes to learn the management of this personality problem. He is directed to the literature, regular discussions with the psychiatrist are planned and he is helped in formulating the case for himself. It is the consensus of the physicians in our medical dispensary that at least 37 per cent of all new cases admitted to the medical outpatient clinic are psychiatric problems. Our department is able to see only approximately 20 per cent of the new cases. The remainder are carried by the internists under our supervision and guidance. Cases presenting good teaching and research problems are sent to the Psychopathic Hospital as these are desired by the staff of that unit.

TEACHING THE STUDENT PSYCHIATRY IN THE OUTPATIENT MEDICAL CLINIC

The General Hospital psychiatrist comes in contact, through the clinical cases, with the student senior clerks, who are assigned in rotating groups of eight to medicine, in the outpatient department and the wards. Each student, before presenting himself for clinical work, is required to study a compendium in which are outlined the rudiments of psychobiology, the methods of examination and a simple, descriptive outline of the differential diagnosis. Each student group is carefully instructed, in a special two hour meeting, how to elicit the facts from the patient and how to sort and use them. Each student spends several two hour periods of his clinical medical outpatient time with the psychiatrist. Since we see our outpatients by appointment, it is possible to choose cases that are best adapted for teaching and that illustrate points made in the general lecture course, and to assign them to students a week ahead of the examination date. If the student clerk has at any previous time seen the patient in question in any clinic of the outpatient department, he is assigned that case for psychiatric study. He is responsible for a thorough knowledge of the case as given by the data thus far collected, including other clinical examinations, any laboratory reports and the material our social service department has collected from social agencies, schools, employers or relatives. During his six weeks in medical clinic, each student has from three to five opportunities to examine new cases. At the first meeting with a patient he listens to the psychiatrist as he obtains the data from the patient, records it, formulates it and outlines the therapy. At the second meeting the clerk is required to record the data under supervision as the psychiatrist elicits it. The third meeting finds the student doing the whole job with the psychiatrist sitting by as an observer and assistant. The complaint of the patient is carefully and completely elicited. It has been our experience that if the student can be led to get these most important data his curiosity will usually compel

him to understand them by obtaining a thorough history and doing complete examinations. In order to emphasize this, we endeavor to evaluate our treatment accomplishments in terms of complaint changes. About two students out of each group of eight clerks desire to treat some of their cases. They are allowed to do so, always under the guidance of the psychiatrist. One morning a week, only cases previously examined are seen by the psychiatrist. This enables us to discuss perhaps eight or ten cases under treatment with each individual student, to explain what has been done in previous interviews, what we wish to accomplish at the present meeting, how we shall attempt to do it and then to allow him an opportunity to see the actual work. After the interview, a discussion of what we feel we have and have not accomplished and why is always held.

It has been very interesting to note how the students in their required medical, gynecologic, dermatologic and other examinations of patients throughout the dispensary are beginning to record more and more the real complaint of the patient and to evaluate the personality evolution. Now, after twenty months of activity, we notice that in a large majority of cases referred to us the student has already correctly evaluated the case and begun some psychotherapy prior to referral. This has begun to infect the busy visiting clinician, who now frequently comes, usually with his student group, to ask how he should proceed with "such and such a case" that he has in his private practice.

TEACHING THE STUDENT PSYCHIATRY IN THE GENERAL HOSPITAL

The case material and teaching of the students in the wards is handled in a somewhat similar fashion. In this instance we see only cases referred to us for consultation by the resident and visiting staffs. The only insistent requirement here made is that the intern write out a formal request for the psychiatric consultation, formulating the case, not in quasidiagnostic phraseology but in simple facts. As soon as the case is referred to us the student assigned to the case is automatically responsible for the incorporation of a full psychiatric work-up with his regular medical and surgical one. The case is seen either in the wards or in the liaison office and examined physically, neurologically and psychiatrically. The results of these examinations and those of other special tests or examinations are then formulated briefly, particular attention being paid to differential diagnostic points and treatment as outlined. The carrying out of therapy may follow one of three routes: The intern has first choice; if he wishes to try his hand he is allowed to do so, with the requirement that he have daily conferences with the psychiatrist. The student may do likewise. If neither wishes to take an active part, or if the psychiatrist feels that the problem is too difficult for them, they are urged to observe and follow the treatment instituted by the psychiatrist. Once a week the psychiatrist accompanies the visiting internist and his resident staff on ward rounds. Following these rounds, all repair to the liaison department offices, where all cases are discussed as to points of interest, research problems, teaching, therapeutic opportunities, sociological involvements and means of accomplishing an end satisfactory to all.

Once weekly for two hours we meet the student clerks assigned to the medical wards. At these meetings the students present their cases. The cases are discussed and therapy evaluated. Care is taken to collaborate with the teachings of the internists and surgeons when nonpsychiatric problems are encountered. A ward walk concludes the hour. At this time the student in charge of the given case is acting master of ceremonies in demonstrating the case and in applying the therapy decided on. The psychiatrist stands by to prevent difficulties from arising and to polish off the exercise. This tends to give the student clerk a feeling of security in himself and certainly a familiarity with the practical application of knowledge gained by other means.

LIAISON TEACHING THROUGH LECTURES

The more formal teaching of psychobiology and psychiatry, as applicable to general practice, is taken up in a lecture course held each week for one hour throughout the entire senior year. In this course the first trimester of twelve hours is spent in reviewing psychobiology and in weaving it into the general clinical and usual didactic courses. In these meetings, which are always accompanied with clinical demonstrations, the participations of the various somatic systems, organs and physiologic processes in personality function are discussed. The second and third trimester lectures are given over to discussions of treatment of the more usual reaction types occurring in the general hospital, dispensary and practice. Once a month, one of the internists joins the psychiatrist in presenting a clinic to the senior class. In this clinic the internist is given the floor for the purpose of emphasizing the importance of psychobiologic concepts and psychiatric principles in everyday medicine, and for emphasizing differential diagnostic points and his need for psychotherapeutic aids.

OTHER LIAISON TEACHING PROJECTS

There are other liaison teaching projects which are not to be considered less important merely because I mention them briefly in closing.

At Colorado University the second year medical student is first initiated into psychiatry through biweekly discussions at the Psychopathic Hospital. As a junior student he receives training in formal psychobiology and psychiatric procedures from Dr. Ebaugh. As a senior, his Psychopathic Hospital work allows for more personal clinical contact with patients through work in the wards and in demonstration clinics. It was necessary to weld this with the work in the General Hospital and to sensitize the junior student to the psychiatric problems common to general medicine and surgery that await him as a senior. In order to do this the liaison psychiatrist is occasionally invited to join Dr. Waring, the professor of medicine, in his regular medical clinic for juniors wherein the clinical demonstration is made of cases taken from the outpatient department and the wards of the General Hospital and showing psychiatric problems.

The psychiatrist of the liaison department, once weekly, endeavors to take medical principles and practices and his experiences with psychiatric patients in the General Hospital to the wards of the psychopathic unit by means of discussions with the physicians in that hospital.

THE SOCIOLOGICAL ASPECT

In an attempt to broaden the student's horizon to include the sociological factors and problems bearing on the presenting act of the biologic drama of the patient, and to acquaint the student with community resources at his disposal in caring for his patient's problems, we instituted last year what we chose to term "medicosociological conferences." These conferences

V 107
1936

were held at irregular intervals during the year and were open to students, nurses and staff members. Such topics as "Educational and Vocational Aspects of Feeblemindedness," "Physical-Medical Disabilities in Dollars and Cents," and "The Physician and the Court" were discussed by from four to six discussants mustered from industry and business, the legal profession, courts, school systems, various medical specialties, and governmental social agencies.

An attempt is being made to impregnate gradually the industries, schools, courts and social agencies with the medicosociopsychiatric needs of the community and state. A constant effort is made to sensitize the student and hospital physician to the sociological needs of the community, as to how some of the patients' symptoms are repercussions of general economic problems, as to his responsibility to his community and patient, and as to how he can utilize the available resources.

BEDSIDE TEACHING

CONSIDERATION OF THE PATIENT'S EMOTIONAL RESPONSE TO CASE DISCUSSION

EUGEN KAHN, M.D.
AND
GROVER F. POWERS, M.D.
NEW HAVEN, CONN.

The use of the hospital ward and dispensary as the laboratory for the teaching of clinical medicine is a procedure with ancient and approved lineage—a descendant of the master-apprentice relationship which probably antedates formal academic disciplines. In modern times, bedside teaching of the medical student has been emphasized rather more in British than in continental schools, where the didactic lecture system was stressed.[1] In the United States, teaching in the medical schools was for many years largely by lectures and recitations. To Abraham Jacobi (1830-1919), nestor of American pediatrics, great credit is due for early attempts to break away from this method and establish clinical teaching in its laboratory—the bedside.

Reminiscing in 1917, Jacobi [2] wrote:

> If ever you will recall for yourself and your friends the first, the very first beginning of medical bedside instruction in America, please tell them of the small college on East 13th Street—I believe 118—which had to close its doors in 1864, a victim of the Civil War, which deprived us of our Southern students. That is part of your American medical history worth remembering. I was permitted to be quite active in that successful enterprise, and utilized my opportunities in preferring my pets, the young patients. My later experience will teach you that successful bedside teaching was almost exclusively pediatric. Thus pediatry was the example of giving correct medical instruction.

However, it was with the launching of the Johns Hopkins Medical School in 1893 and the impetus given to educational procedures by the example and success of William Osler that clinical clerkships and bedside conferences were established as the sine qua non of clinical instruction.[3] Recognition of Osler's important share in this development in American medical education is evidenced in Cushing's dedication of his biography of Osler:

> To Medical Students . . . and particularly to those in America, lest it be forgotten who it was that made it possible for them to work at the bedside in the Wards. . . .

In his valedictory address at Johns Hopkins University, Osler [4] said:

> By far the greatest work of the Johns Hopkins Hospital has been the demonstration to the profession of the United States and to the public of this country of how medical students should be instructed in their art. I place it first because it was the most-needed lesson; I place it first because it has done the most good as a stimulating example, and I place it first because never before in the history of this country have medical students lived and worked in a hospital as part of its machinery, as an essential part of the work on the wards.
>
> In saying this, heaven forbid that I should obliquely disparage the good and faithful work of my colleagues elsewhere. But the amphitheater clinic, the ward and dispensary classes, are but bastard substitutes for a system which makes the medical student himself help in the work of the hospital as part of its human machinery. He does not see the pneumonia case in the amphitheater from the benches, but he follows it day by day, hour by hour, and he has his time so arranged that he can follow it; he sees and studies similar cases, and the disease itself becomes his chief teacher, and he learns its phases and variations as depicted in the living, and he knows under skilled direction when to act and when to refrain from action, he learns insensibly principles of practice, and he possibly escapes a nickel-in-the-slot attitude of mind, which has been the curse of the profession in the treatment of disease.
>
> And the same with the other branches of the art; he gets a first-hand knowledge which, if he has any sense, may make him wise unto the salvation of his fellows. And all this has come about through the wise provision that the hospital was to be part of the medical school, and it has become for the senior students, as it should be, their college. Moreover, they are not in it on sufferance and admitted through side doors, but they are welcomed as important aids without which the work could not be done efficiently.

There can be no question of the essential value to the clinical student of teaching at the bedside. There the teacher-physician has the opportunity to observe his patient and convey his observations immediately to his student or apprentice; there the teacher can make his student or apprentice familiar with his methods of examination and the student is able to examine the patient under the direction and control of his teacher.

Such teaching developed in the homes of patients, in the hospitals in which patients were housed and nursed and in the dispensaries. One can easily picture one of the teachers in medicine expounding his observations to one student, or to a group of students, in the presence of the patient, and leading a discussion with the students about the condition of the patient, about the plan of therapy, and possibly about prognosis.

It is quite understandable that this technic would develop differently in the hands of different teachers. Even if the teaching physician understands perfectly his primary responsibility of helping his patient, as a teacher he also has another task; namely, to use his patient as "teaching material" for his students. These responsibilities are not wholly antagonistic, for undoubtedly the student by his examinations and laboratory investigations not only furnishes valuable concrete contributions to the "work-up" of the case but by his questions and comments stimulates his teacher to a more critical and searching appraisal of clinical data. Thus, the presence of a student "on the case" is often an asset

From the Departments of Psychiatry and Pediatrics, Yale University School of Medicine.

1. Welch, W. H.: A Great Physician and Medical Humanist: A Review of Harvey Cushing's Life of Sir William Osler, Saturday Review of Literature, November 1925.
2. Jacobi, Abraham: History of Pediatrics in New York, Arch. Pediat. **34**: 1 (Jan.) 1917.
3. Osler, William: The Natural Method of Teaching the Subject of Medicine, J. A. M. A. **36**: 1673 (June 15) 1901.
4. Osler, William: Valedictory Address at Johns Hopkins University, J. A. M. A. **44**: 705 (March 4) 1905.

of prime value in ascertaining knowledge of disease; the high position in which teaching hospitals are held in lay and professional regard is testimony to this fact.

However, this knowledge of disease which the student assists in acquiring and assembling is not always handled in such a way as to bring optimal benefit to the subject; too much is not known of the disease but too little is known of the patient and too little attention is given to satisfactory relating of patient and medical knowledge. The second responsibility of the clinical teacher, i. e., the use of the patient as teaching material, may quite obviously bring danger to the patient as well as influence harmfully the attitude of the physician-to-be; although the pedagogic procedure is an absolute necessity from the point of view of teaching the student it can be considered also as a necessary evil both from the point of view of the patient and from the point of view of the physician, who in the first instance wants to help the patient and to avoid everything that might damage him.

The idea has been developing in medicine that physicians are not treating diseases but are dealing with diseased human beings. Doubtless considerable progress has been made along this line and the fundamental idea seems to be well understood, but in clinical pedagogy how is it possible to reconcile one's understanding of the patient as a human being with the teaching necessity of using him as "material"?

It is our impression that in teaching hospitals and dispensaries the majority of the patients concerned lend themselves to the teaching of their physicians with remarkable good will and grace. It is relatively rare that a patient rejects the suggestion of being shown and examined and possibly for a time treated under guidance by a student. This attitude, we want to stress, increases the physician's obligation when doing any bedside teaching to find the right way to satisfy both the students' needs and his patients' feelings.

In his preclinical years the student has been used to dealing with "material" of different kinds in a very free manner; he had the opportunity to discuss everything perfectly freely with his teacher individually or in a group regardless of the physical presence of the "material" concerned. When he comes into his clinical years he is confronted with a new situation. The connecting link between him and his teacher is no longer a guinea-pig, an anatomic or pathologic specimen, or a biochemical reaction, but another human being. The student is likely to throw himself on the patient with an eagerness similar to that which he displayed when taking hold of preclinical "material." Even if it is assumed that a goodly number of students bring with them to their clinical years sympathetic understanding and much tact, the idea cannot be avoided that the development of their "bedside manners" will greatly depend on the "bedside manners" of their clinical teachers.

We have had the experience that some clinical teachers, with the best of intentions, of course, are not dealing in the most desirable way with their patients when they are examining them in the presence of students. We have noted that, for instance, the subject of blood pressure is freely discussed at the patient's bedside and have seen patients who heretofore were ignorant of their own blood pressure and of the conception of blood pressure, for that matter, worried for weeks about their alleged hypertension so that it became almost necessary to institute special psychotherapy. A remark may be made by the teacher or by the student like this: "I can feel his kidney." Even though it is possible afterward to explain to the patient that in some lean people the normal kidney can be palpated, such a remark is, to say the least, entirely superfluous. But such mishaps are almost innocent in comparison with remarks about possible tuberculosis or tumor. Such remarks, especially if they are made with the well known "objectivity as to material," can hit the patient like a thunderbolt and can break down his morale and hope of recovery.[5]

A patient in a condition of anxious depression had a slight swelling of her finger on which she wore her wedding ring. A young doctor remarked that "the best thing would be to cut it off," meaning, of course, the ring. The patient, however, thinking he meant her finger, spent some days in agony lest the finger be amputated.

All manner of highly undesirable remarks and discussions are likely to occur if charts, specimens and roentgenograms are indiscriminately exhibited during bedside teaching. One has to realize that the patients, or at least many patients, are under emotional stress in this situation and only too apt to listen anxiously and to interpret wrongly what they hear. It is, of course, another matter if the experienced physician purposely gives a patient, of whose sensible and understanding attitude he is sure, some appropriate information on, say, his temperature or his anatomy and physiology.

We think that it cannot be emphasized enough that the patient offers himself, in a sense, as a sacrifice when he lends himself to bedside teaching and that he is entitled to be dealt with in the gentlest and most considerate way. Whether or not he appears to be a sensitive person does not matter at all. Every patient ought to be treated as if he were sensitive, and every remark that might hurt a patient's sensitivity must needs be avoided if physicians want to carry on and further develop bedside teaching.

It is our opinion that the student must be made familiar with the considerate attitude toward a patient that is expected of him at a very early period of training. It is desirable to acquaint the student with this attitude before he goes into his clinical years. For this reason psychiatrists for years have urged that courses be offered in introductory psychiatry or medical psychology or whatever one wants to call them—courses in which at the outset lectures are given to the student explaining what is understood under personality and emphasizing the necessity of dealing with patients assigned to him as human beings, forgetting that there ever existed the conception "clinical material." In such a course the first periods may be devoted to theoretical topics, but later the presentation of persons should be introduced. It is practical and promising first to show healthy and normal human beings, always having in mind, however, the fundamental idea that what must be brought home is the fact that the demonstrated person

5. Although we are principally concerned in this paper with situations involving student teaching, we wish to inveigh against the practice under any circumstances of ill considered, tactless discussions of a patient's problems in his hearing. For example, a thoughtless mother and physician were discussing the examination just made of a seven year old child. The boy looked up from his supposed play and in a sobbing voice said, "I know what you are saying and it worries me!" A loud voice in discussion in a room below that of the patient or half heard whisperings outside a door may bring needless suffering. The practice in pediatric bedside teaching of discussions carried on in the hearing of very young children is usually considered harmless because, it is said, "The child cannot understand what we are saying!" This is not the fact, however; children often understand spoken language far more adequately than adults image. But even if the spoken word is not clearly understood, what of the frown or shoulder shrug, the somber face or ill timed smile or laugh! This sign language carries a message no less fraught with potentialities than the most definite conversation with an adult.

V 10
1936

is a human individual; a fact which, of course, implies that the subject is an individual belonging to a group, or rather to various groups small and large, to a family, to a community, and so on. It is necessary to develop the idea in front of the student that the patient has some sort of personality makeup which has been and still is developing in a certain social and cultural milieu. Later in the course, slightly "abnormal" and then seriously sick personalities may be demonstrated; after the demonstration, the patient's difficulties should be discussed in as detailed a way as possible, it being shown how they were bound to develop under the given circumstances and, further, how problems of disease entered into the picture and were dealt with by this specific human being. Problems of therapy may be left out in such a course altogether, but it may be useful in one or two of the later discussions to make reference to treatment and to expound in a very general way modern trends in that subject.

Needless to say, in such a course and ever after, discussion of the patient's problems in the presence of the patient himself ought to be scrupuously avoided. For a time it is necessary to call the attention of the students to this avoidance, but later it should become "second nature" to students and instructors alike. It is very easy in any clinical demonstration to let the patient leave the room before the teacher starts his discussion. It is equally easy for the teacher to leave the patient's bedside with his students after the examination has been accomplished and before he begins to discuss the patient with the student group. In every teaching hospital there are rooms to which the teacher may retire with his students and where he can discuss pathology and therapy to his heart's desire without hurting the feelings or threatening the interests of his patients.

One might say that most patients are naturally anxious to learn about the physician's conclusions as soon as possible. This is doubtless true and it belongs to the responsibility of the physician to give his patient all the information to which he is entitled. But this, in general, should not be done in the presence of other people. The relationship between patient and physician is a very subtle one, so subtle indeed that it can be disturbed by an inconsiderate word, which is much more difficult to avoid in the presence of a third party and which is more difficult to correct than when the patient and his physician work only with each other. It is necessary that in the discussions following the bedside teaching the student should be told how to approach the problem "What am I to say to my patient?" We realize that part of our students will learn this very fast. We realize, furthermore, that another part may never learn it satisfactorily. We trust, however, that if the clinical teachers are entirely aware of what they are doing, our students will acquire better "bedside manners" and our patients will profit by such an improvement.

We are not unmindful of the fact that nowadays when the newspapers print daily some sensational discussion of diseases and their treatment, and when the patients come for our help filled with "enlightenment" obtained from this and similar sources, the physician is often placed in a difficult position. However, we do not think that this position is too difficult to be mastered if we ourselves are conscious of our profound obligations toward those human beings who come to us as patients, and if we incessantly preach these obligations to those who will be our colleagues and successors in the profession.

ORAL COMPLICATIONS OF CHRONIC ALCOHOLISM

SIGNIFICANCE, RECOGNITION AND TREATMENT

M. A. BLANKENHORN, M.D.
AND
TOM D. SPIES, M.D.
CINCINNATI

For this consideration we do not know whether the mouth lesions here to be described should be classed as complications of or as an essential part of the complex disease caused by the chronic use of alcohol. We know they occur very often and are the forerunner of a serious condition known as alcoholic pellagra, which is probably a deficiency disease. In that sense the mouth lesions are a complication. If, however, it is ultimately learned that all the important lesions of chronic alcoholism are due to the fact that the alcoholic addict substitutes "drink" for food or that alcohol so deranges his digestion that he cannot utilize food, either one or both devices may be present, then we should rightly say that these mouth lesions are an essential part of a complex deficiency disease known as chronic alcoholism.

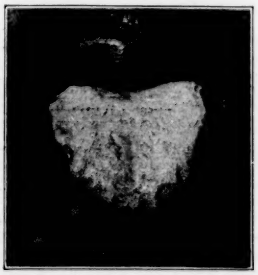


Fig. 1.—Teeth impressions at sides and tip of tongue due to swelling.

No one will know the importance of deficiencies in the pathology of chronic alcoholism until early diagnosis is made and adequate treatment applied in a large group of cases. For that reason we present our observations on a series of patients so studied. The case material of this report is a group of seventy-three patients from Lakeside Hospital and the Cleveland City Hospital described[1] in 1933 as alcoholic pellagrins, and a second series of 125 cases[2] of pellagra, 95 per cent of which were known as chronic alcoholic addicts. In the first series 88 per cent had mouth lesions; in the second series, more than 50 per cent. The same lesions we have also seen in a large percentage of patients treated in the Cincinnati General Hospital, Division of Psychiatry, for delirium tremens, some of whom must be classed as mild pellagrins.

Because of the prevalence of these lesions, which can easily be found if looked for, we suggest that any one addicted to alcohol who comes complaining of weight loss, poor appetite or weakness should be so examined.

The tongue, lips and buccal membranes, gums and palate are all concerned and the term stomatitis covers the condition generally.

As to glossitis, the tongue becomes slightly swollen as evidenced at first by an increase in size and later by teeth impressions at the sides and tip (fig. 1). This

From the Department of Internal Medicine, University of Cincinnati College of Medicine.

Read before the Section on Practice of Medicine at the Eighty-Seventh Annual Session of the American Medical Association, Kansas City, Mo., May 15, 1936.

1. Spies, T. D., and DeWolf, H. F.: Observations on the Etiological Relationship of Severe Alcoholism to Pellagra, Am. J. M. Sc. **186**: 521 (Oct.) 1933.
2. Spies, T. D.: The Treatment of Pellagra, J. A. M. A. **104**: 1377 (April 20) 1935.

swelling is almost always associated with bright red discoloration or exaggeration of the normal color. It is remarkable how little of coating there may be, even though the patient eats poorly. As the process extends, more and more of the tongue is involved and there is an increase in the intensity of the red discoloration and in the swelling. If treatment is not given, ulcers may appear along the sides and tip, rarely on top (fig. 2).

Fig. 2.—Early ulceration of the tongue.

Often the tongue becomes semianesthetic, though occasionally it is hypersensitive. There is not so much complaint of sore tongue in the delirium tremens group as among the outspoken pellagrins.

Stomatitis follows a course similar to that of glossitis. The gums and mucous membranes become deeply reddened, swollen and tender (fig. 3). If left untreated, the process extends and often involves large areas, and here and there may appear ulceration of a mild form. The diffuse redness of buccal membranes and soft palate suggests that seen at the onset of influenza, except that there may be no conjunctivitis and no rhinitis. The gums are quite like any form of severe "pyorrhea" and the Vincent's organism is easily demonstrated. A publication by one of us (T. D. S.) describing the relation of vitamin deficiency to Vincent's infection is soon to appear.

These lesions respond almost immediately to adequate specific therapy if such treatment is started early in the course of the disease. The methods of treatment which we found to be most efficacious in the treatment of pellagra have likewise proved to be beneficial in treating the glossitis and stomatitis complicating chronic alcoholism. These methods consist in the administration of a well balanced, highly nutritious diet of at least 4,000 calories a day supplemented by 25 Gm. of yeast or liver extract three times a day. Wheat germ, administered in amounts of 50 Gm. four times a day as a supplement to the diet, is also very beneficial. Response to such methods of treatment is dramatic; marked improvement occurs in from twenty-four to thirty-six hours, and within a few days the tongue and mucous membranes have changed from dark red to grayish pink and have returned to their normal size.

Fig. 3.—Ulceration on dorsum of tongue and marked gingivitis.

Whether or not the glossitis and stomatitis observed in the chronic alcoholic addict and characterized by reddening, swelling and ulcerations of the tongue, gums and oral mucous membranes would eventually develop into a condition recognizable as true pellagra is not pertinent to the welfare of the patient. The important thing is that the physician be constantly on the watch for such oral changes so that proper treatment may be administered in time to prevent the development of more serious conditions.

SUMMARY

In a series of over 200 patients suffering from chronic alcoholism and pellagra, approximately 60 per cent were found to have specific lesions of the mouth and tongue. Early treatment consisting of a nutritious diet of 4,000 calories and 75 Gm. of yeast or liver extract daily caused the lesions to disappear. Such lesions frequently precede alcoholic pellagra and are considered to be manifestations of a serious deficiency state.

THE ETIOLOGY OF POLYNEURITIS IN THE ALCOHOL ADDICT

NORMAN JOLLIFFE, M.D.
AND
C. N. COLBERT, M.D.
NEW YORK

That vitamin deficiency may be an etiologic factor in the development of polyneuritis in the alcohol addict was first mentioned on theoretical grounds by Shattuck[1] in 1928 and Minot[2] in 1929. The work of Wechsler,[3] Minot, Strauss and Cobb,[4] and Meyer[5] indicates that the alcohol addict with polyneuritis has, as a rule, a qualitatively inadequate intake of food and vitamins, and that the clinical manifestations and pathologic observations of beriberi and "alcoholic" polyneuritis are similar. These authors suggested, therefore, that vitamin B deficiency may be the decisive factor in producing polyneuritis in alcohol addicts. Strauss[6] and Blankenhorn and Spies[7] showed that patients having "alcoholic" polyneuritis improved if treated with a diet rich in all vitamins, supplemented by oral and parenteral administration of preparations rich in vitamin B, even while they were given from a pint to a quart of blended whisky daily. Strauss concluded that ingestion of whisky has no demonstrable toxic effect on the peripheral nerves.

Cowgill[8] has shown that the vitamin B (B_1) requirement of man can be estimated by the formula $\frac{\text{Vitamin B mg. equivalent}}{\text{Calories}} = 0.0000284$ weight in grams. This formula indicates that the vitamin B requirement of man is proportional to both caloric intake and body weight. From the nature of the equation, the expression $\frac{\text{Vitamin B mg. equivalent}}{\text{Calories}}$ (hereafter referred to as the

Read before the Section on Practice of Medicine at the Eighty-Seventh Annual Session of the American Medical Association, Kansas City, Mo., May 15, 1936.

From the Departments of Medicine and Psychiatry, New York University College of Medicine, and the Psychiatric Medical Service of the Third (New York University) Medical Division, Bellevue Hospital.

1. Shattuck, G. C.: Relation of Beriberi to Polyneuritis from Other Causes, Am. J. Trop. Med. **8:** 539-543 (Nov.) 1928.
2. Minot, G. R.: Some Fundamental Clinical Aspects of Deficiencies, Ann. Int. Med. **3:** 216-229 (Sept.) 1929.
3. Wechsler, I. S.: Unrecognized Cases of Deficiency Polyneuritis (Avitaminosis?), M. J. & Rec. **131:** 441-444 (May 7) 1930; Etiology of Polyneuritis, Arch. Neurol. & Psychiat. **29:** 813-827 (April) 1933.
4. Minot, G. R.; Strauss, M. B., and Cobb, Stanley: "Alcoholic" Polyneuritis: Dietary Deficiency as a Factor in Its Production, New England J. Med. **208:** 1244-1249 (June 15) 1933.
5. Meyer, August: Ueber das Vorkommen von B-Avitaminose unter den hiesigen Lebensbedingungen, Schweiz. med. Wchnschr. **62:** 1243 (Dec. 31) 1932.
6. Strauss, M. B.: The Etiology of "Alcoholic" Polyneuritis, Am. J. M. Sc. **188:** 378-382 (March) 1935.
7. Blankenhorn, M. A., and Spies, T. D.: Prevention, Treatment, and Possible Nature of the Peripheral Neuritis Associated with Pellagra and Chronic Alcoholism, Tr. A. Am. Phys. **50:** 164, 1935.
8. Cowgill, G. R.: The Vitamin B Requirement of Man, New Haven, Yale University Press, 1935

vitamin/calory ratio) may be used as a quantitative expression, by reference to Cowgill's prediction chart,[8] of the adequacy or inadequacy of the vitamin B content of the diet of an individual of known weight. Using this method in a recent study, we[9] estimated the vitamin/calory content of the diets of forty-two alcohol addicts who gave reliable histories. By including in the estimation of the vitamin/calory ratio the first 1,600 calories derived from alcohol we demonstrated (1) that the diets of alcohol addicts with polyneuritis failed over an effective period of time to contain adequate quantities of vitamin B as compared with the predicted requirement of each patient; (2) that the diets of alcohol addicts without polyneuritis, though the addiction was of long duration, contained adequate quantities of vitamin B as compared with the predicted requirement; (3) that certain subjects without polyneuritis consumed enough alcohol over an adequate period of time to cause peripheral nerve involvement if alcohol per se was its cause. We present in this study additional evidence, in the form of therapeutic results, that vitamin B deficiency is the cause of polyneuritis in the alcohol addict. In presenting this evidence we are aware of the hazard of interpreting therapeutic results without a definite objective yardstick. Moreover, peripheral neuritis is a chronic disease, subject to wide variations in the degree of involvement, in which therapy effects complete cure only after a long period of time, with an occasional complete failure.[10] These subjects frequently have a multiple rather than a single deficiency, and in some the pathologic changes may be so far advanced as to be irreversible. Even in experimental animals, maintained with a diet deficient only in vitamin B, therapy which is usually curative may fail completely.[8] However, by the alternate case method of study we have obtained three groups of subjects of about equal severity of peripheral nerve involvement in whom we believe the therapeutic results may be compared.

METHODS OF STUDY

The alcohol addicts selected for this study had polyneuritis, as evidenced by symmetrical sensory changes in the peripheral nerve distribution of the lower extremities and, as a rule, by changes in the deep tendon reflexes. Patients having complications likely to increase the vitamin B requirement, or likely to prevent absorption from the gastro-intestinal tract or utilization of vitamins (pneumonia, tuberculosis, hyperthyroidism, delirium, vomiting, diarrhea, pellagra, clinical icterus, ascites), were excluded from this study. A palpable liver, dependent edema, low grade fever, achlorhydria, anemia, anorexia or a psychosis not associated with delirium did not cause exclusion. The selected patients were placed in rotation into groups A, B and C until twenty-three subjects were studied; then five successive patients were placed in group C, making a total of twenty-eight subjects. Certain subjects in groups A and C, following observation in their respective groups, received treatment designed to test a therapeutic agent. All subjects were given physical therapy, and symptomatic treatment was given as occasion required. Observations on changes in the neurologic status were made by the same observer at weekly intervals, and in certain subjects daily. Because of variations in interpreting hyperactivity or sluggishness of tendon reflexes, they are reported only as being present or absent. For similar reasons, changes in skin sensitivity are reported as to extent but not degree. Changes in vibratory sense are reported as to extent of complete loss.

Group A: The seven patients in this group were given a basal diet[11] estimated to contain 2,190 calories and 3,680 mg. equivalent (736 Sherman units) of vitamin B. The vitamin/calory ratio of this diet is 1.7, which is of borderline adequacy for subjects weighing from 58 to 63 Kg. Subject 5 weighed 56 Kg., and the remaining subjects weighed 58 Kg. or more. Subjects 3, 4 and 6 received daily 18 Gm. of vegex[12] which had been autoclaved on two successive days for four hours at 20 pounds pressure. This treatment, as shown by growth tests on rats, destroys the antineuritic vitamin B.

Group B: The eight patients in this group received the same basal diet as those in group A, but in addition they were given 18 Gm. of unheated vegex daily. The vegex contains about 225 mg. equivalent (45 Sherman units) of vitamin B per gram. This added 4,050 mg. equivalent of vitamin B to the basal diet, making the vitamin/calory ratio 3.6, which is double the vitamin B requirement of a subject weighing 64 Kg.

Group C: The thirteen patients in this group received a vitamin rich diet estimated to contain 3,100 calories and 17,250 mg. equivalent of vitamin B, resulting in a vitamin/calory ratio of 5.5. To this diet was added 18 Gm. of vegex daily, bringing the vitamin/calory ratio up to 6.8. This ratio is almost twice that received by subjects in group B, and four times that received by subjects in group A.

RESULTS

Observations on the objective neurologic signs of peripheral nerve involvement in the seven patients in group A, and the results of maintaining them with a diet containing a vitamin/calory ratio of 1.7, are summarized in table 1. No patient showed objective signs of motor or sensory improvement. Subject 6, who weighed 90 Kg., developed a bilateral foot drop after twenty-nine days. Subjects 2, 3 and 4 showed advancement in the sensory abnormalities at the end of twenty-eight, thirty-three and twenty-seven days respectively of observation. Subjects 3, 4 and 6 received autoclaved vegex in addition to the basal diet, but, like the subjects who did not receive this supplement, they failed to improve.

Observations on the eight subjects in group B, maintained with the identical diet as the subjects in group A but with a supplement of 18 Gm. of (unheated) vegex daily, are summarized in table 2. No subject became worse. Subject 9 failed to show either motor or sensory improvement after forty-four days. In three subjects (8, 11 and 15) sensory improvement was observed by the twenty-first day; in the remaining four sensory improvement was observed later. Six of the eight subjects in this group showed motor involvement by our criteria. Improvement in the motor phase was observed in three of these by the twenty-first day. In two (subjects 8 and 15) the motor improvement consisted of a return of knee jerks, and in the third (subject 11) the bilateral foot drop disappeared. In no subject were

9. Jolliffe, Norman; Colbert, C. N., and Joffe, P. M.: Observations on the Etiologic Relationship of Vitamin B (B_1) to Polyneuritis in the Alcohol Addict, Am. J. M. Sc. **191**: 515-526 (April) 1936. Jolliffe, Norman, and Joffe, P. M.: Relation of Vitamin B (B_1) Intake to Neurological Changes in the Alcohol Addict, Proc. Soc. Exper. Biol. & Med. **32**: 1161-1162 (April) 1935.

10. Vorhaus, M. G.; Williams, R. R., and Williams, R. E.: Studies on Crystalline Vitamin B_1: Experimental and Clinical Observations, J. A. M. A. **105**: 1580-1584 (Nov. 16) 1935.

11. The basal diet consisted of oatmeal, 40 Gm.; white bread, 240 Gm.; macaroni, 30 Gm.; milk, 90 cc.; meat (beef, mutton or chicken), 150 Gm.; white potatoes, 130 Gm.; vegetables (beets, carrots, onions), 100 Gm.; stewed fruit (apples, apricots), 150 Gm.; butter, 45 Gm.; sugar, 30 Gm.

12. Courtesy of Vegex, Inc., New York.

absent ankle jerks noted to return within twenty-one days.

Observations on the thirteen subjects in Group C, maintained with a vitamin rich diet containing a vitamin/calory ratio of 5.5 supplemented by 18 Gm. of vegex daily, giving a total vitamin/calory ratio of 6.8, are summarized in table 3. No subject became worse. All the subjects in this group showed improvement in the sensory status, eleven of them within twenty-one days, while objective motor improvement was noted in ten subjects, all within twenty-one days. At the beginning of treatment the knee jerks were absent in ten subjects; they appeared in seven within twenty-one days. At the beginning of treatment ankle jerks were absent in all thirteen subjects; they appeared in five within twenty-one days. In the three subjects who showed no motor improvement the ankle jerks remained absent after thirty-eight, forty-eight and thirty-three days, and the knee jerks after thirty-eight and thirty-three days of treatment.

TABLE 1.—*Changes in Objective Neurologic Signs of Peripheral Nerve Involvement in Seven Subjects Maintained with a Diet Containing a Vitamin/Calory Ratio of 1.7*

			Motor						Sensory					Results	
			Deep Tendon Reflexes												
Case	Age	Sex	Ankle	Knee	Biceps	Triceps	Foot Drop	Wrist Drop	Vibratory	Position	Calf Tenderness	Skin Sensitivity	Days of Treatment	Motor	Sensory
1	28	♀	0	0	0	0	+	N	K	T	+	K	0		
			0	0	0	0	+	N	K	T	+	K	34	U	U
2	30	♂	+	+	+	+	N	N	N	N	+	A	0		
			+	+	+	+	N	N	T	T	+	ML	28	U	W
3	59	♂	0	+	+	+	N	N	T	N	+	P	0		
			0	+	+	+	N	N	K	N	+	K	33	U	W
4	43	♀	0	0	+	+	N	N	A	T	+	ML	0		
			0	0	+	+	N	N	Pel.	T	+	ML	27	U	W
5	44	♀	0	0	0	0	+	N	Pel.	A	+	P	0		
			0	0	0	0	+	N	Pel.	A	+	P	39	U	U
6	54	♂	0	0	0	0	N	+	Pel.	T	+	ML	0		
			0	0	0	0	+	+	Pel.	T	+	ML	29	W	U
7	35	♀	0	0	+	+	+	N	K	N	+	K	0		
			0	0	+	+	+	N	K	N	+	K	74	U	U

In this and the following tables: 0 = absent, + = present, N = normal, T = absent in toes, A = absent or abnormal in ankles and below, ML = absent or abnormal below midleg, K = absent or abnormal below knees, MTh = absent or abnormal below midthigh, Ped. = absent or abnormal below pelvis, P = abnormal on plantar surface, G = abnormal in all extremities; I = improved, U = unimproved, W = worse.

Observations on the five subjects originally treated in group A or C but who later received different therapy are summarized in table 4. Subject 6, who grew worse after twenty-nine days in group A on the basal diet supplemented by 18 Gm. of autoclaved vegex, was then placed in group C. No improvement was noted by the twenty-first day, but by the thirty-fourth day the foot drop and wrist drop had disappeared and biceps jerks returned, and sensory improvement was noted.

Subject 5 was treated for thirty-nine days in group A on the basal diet without motor or sensory improvement occurring. She was then given for seventy-two days 10,000 mg. equivalent daily of a vitamin B concentrate[13] by mouth. This supplement brought the vitamin/calory ratio up to 6.5. No objective motor or sensory improvement was observed during this time. A preparation of vitamin B for parenteral administration was not then available.

Subject 7 was treated for seventy-four days in group A on the basal diet without improvement occurring. At this time there were absent ankle jerks, a bilateral foot drop, and extreme skin hyperesthesia in the lower extremities. The patient was given by intravenous injection for five consecutive days 10 mg. daily of crystalline vitamin B_1.[14] Within forty-eight hours, after 20 mg. of crystalline vitamin B_1, the knee jerks had returned, the foot drop disappeared, and the sensory status was strikingly improved. By the sixth day, after 50 mg. of crystalline vitamin B_1, the patient was able to get out of bed for the first time in eighty days. On the ninth day the diet was changed to the vitamin rich diet of those in group C supplemented by 18 Gm. of vegex, but within a week (sixteenth day) the knee jerks had disappeared, the foot drop returned, and the sensory abnormalities had recurred, though by no means as severely as previously. Continuing the vitamin rich diet and vegex, 10 mg. of crystalline vitamin B_1 was given daily by intravenous injection for two days beginning on the seventeenth day. Dramatic improvement was again noted within forty-eight hours. The patient remained in the hospital seven days more, during which time the improvement was maintained; it has been maintained since then for eight months.

Subject 4 was observed for twenty-seven days in group A with the basal diet and a supplement of 18 Gm. of autoclaved vegex. During this time, sensory abnormalities became worse. The patient was then given by intravenous injection for fourteen consecutive days 10 mg. daily of crystalline vitamin B_1. Sensory improvement was noted on the third day. The knee jerks returned on the fourteenth day, and further sensory improvement was noted. The patient was placed on the vitamin rich diet used in group C, and there has been no regression up to the time of this writing, twenty days later.

TABLE 2.—*Changes in Objective Neurologic Signs of Peripheral Nerve Involvement in Eight Subjects Maintained with a Diet Containing a Vitamin/Calory Ratio of 1.7 plus 18 Gm. of Vegex*

			Motor						Sensory					Results	
			Deep Tendon Reflexes												
Case	Age	Sex	Ankle	Knee	Biceps	Triceps	Foot Drop	Wrist Drop	Vibratory	Position	Calf Tenderness	Skin Sensitivity	Days of Treatment	Motor	Sensory
8	42	♂	0	0	+	+	N	N	T	N	+	P	0		
			0	+	+	+	N	N	T	N	N	N	13	I	I
9	47	♀	0	0	0	0	N	N	T	K	+	P	0		
			0	0	0	0	N	N	T	K	+	P	44	U	U
10	39	♂	0	0	0	0	+	N	K	T	+	K	0		
			0	0	0	0	+	+	K	T	N	N	50	U	I
11	44	♀	0	0	+	+	N	N	T	T	+	P	0		
			0	0	+	+	N	N	T	N	N	N	20	I	I
12	47	♂	0	0	0	0	N	N	A	T	+	P	0		
			0	0	0	0	N	N	N	N	N	N	28	U	I
13	35	♂	+	+	+	+	N	N	A	T	+	K	0		
			+	+	+	+	N	N	A	N	N	N	27	—	I
14	45	♂	+	+	+	+	N	N	A	N	+	ML	0		
			+	+	+	+	N	N	N	N	N	N	28	—	I
15	38	♀	0	0	+	+	N	N	T	N	+	A	0		
			0	+	+	+	N	N	N	N	N	P	21	I	I

Subject 24 was treated in group C for eighty-five days, with good motor and sensory improvement. The sensory status at this time was normal, but the knee and ankle jerks remained absent and the gait was on a widened base. She was then treated as an outpatient for 127 days, taking an unweighed but vitamin rich diet supplemented by three level teaspoonfuls of vegex (about 18 Gm.) daily. The knee and ankle jerks

13. Courtesy of Eli Lilly & Co., Indianapolis.

14. Courtesy of Merck & Co., Inc., Rahway, N. J.

V 10
1936

remained absent and the gait abnormal. The patient was then given 10 mg. daily of crystalline vitamin B_1 by intravenous injection for nine consecutive days. During this time no change in reflexes was noted, but the patient experienced severe paresthesias of the toes.

TABLE 3.—*Changes in Objective Neurologic Signs of Peripheral Nerve Involvement in Thirteen Subjects Maintained with a Diet Containing a Vitamin/Calory Ratio of 5.5 plus 18 Gm. of Vegex*

			Motor						Sensory					Results	
			Deep Tendon Reflexes												
Case	Age	Sex	Ankle	Knee	Biceps	Triceps	Foot Drop	Wrist Drop	Vibratory	Position	Calf Tenderness	Skin Sensitivity	Days of Treatment	Motor	Sensory
16	45	♀	0	0	+	+	N	N	—	—	+	G	0		
			0	+	+	+	N	N	—	—	N	N	20	I	I
17	29	♂	0	0	+	+	N	N	—	—	+	P	0		
			+	+	+	+	N	N	N	N	N	N	9	I	I
18	42	♂	0	0	+	+	N	N	A	N	N	ML	0		
			0	0	+	+	N	N	A	N	N	N	38	U	I
19	48	♂	0	+	+	+	N	N	N	N	+	ML	0		
			+	+	+	+	N	N	N	N	N	N	8	I	I
20	48	♂	0	0	+	+	N	N	A	N	N	A	0		
			0	+	+	+	N	N	T	N	N	N	17	I	I
			+	+	+	+	N	N	N	N	N	N	21	I	I
21	35	♀	0	+	+	+	N	N	Pel.	T	+	P	0		
			0	+	+	+	N	N	A	N	+	P	27	U	I
			0	+	+	+	N	N	T	N	N	N	48	U	I
22	37	♀	0	+	+	+	N	N	T	N	+	ML	0		
			+	+	+	+	N	N	N	N	N	ML	9	I	I
			+	+	+	+	N	N	N	N	N	P	16	—	I
23	40	♂	0	0	+	+	N	N	K	T	+	K	0		
			0	+	+	+	N	N	K	T	+	ML	19	I	I
			0	+	+	+	N	N	A	T	N	N	28	U	I
24	34	♀	0	0	+	+	N	N	A	N	+	K	0		
			0	0	+	+	N	N	T	N	+	P	21	I	I
			0	0	+	+	N	N	N	N	N	N	85	U	I
25	52	♂	0	0	+	+	N	N	A	N	+	K	0		
			0	+	+	+	N	N	T	N	+	P	6	I	I
			+	+	+	+	N	N	N	N	N	N	15	I	I
26	39	♂	0	0	+	+	N	N	A	N	+	P	0		
			0	0	+	+	N	N	N	N	N	N	21	I	I
27	40	♀	0	0	0	+	N	N	T	N	N	MTh	0		
			0	0	+	+	N	N	T	N	N	ML	21	U	I
			0	0	+	+	N	N	T	N	N	N	33	U	I
28	45	♀	0	0	+	+	N	N	—	N	+	MTh	0		
			0	+	+	+	N	N	—	N	N	P	20	I	I

On the tenth day, however, the knee jerks were obtained, and they were still present thirty days later at the time of this writing.

COMMENT

The etiology of polyneuritis in the alcohol addict is further clarified by the response of the subjects in this study to diets containing various quantities of vitamin B. The subjects in group A who received a diet of borderline adequacy in vitamin B or slightly less than their predicted requirement, depending on their weight, failed to show improvement. In some there was advancement in objective neurologic signs of peripheral nerve involvement. If alcohol per se were the cause of peripheral neuritis, the removal of alcohol from the daily regimen should have resulted in some of the subjects showing improvement during the period of observation, which varied from twenty-seven to seventy-four days. Their failure to improve when alcohol was withdrawn, together with the observation of Strauss [6] and of Blankenhorn and Spies [7] that "alcoholic" polyneuritis will improve while patients consume from a pint to a quart of whisky daily if the diet is rich in vitamin B; and together with the evidence of Jolliffe, Colbert and Joffe [8] that alcohol addicts who maintain an adequate vitamin/calory ratio do not develop polyneuritis even though they consume large amounts of whisky over many years, leads us to believe that alcohol per se is not the direct cause of a symmetrical peripheral neuritis.

In table 5 we have summarized the changes occurring within twenty-one days in the three groups of cases. The subjects in group A, given a basal diet containing a vitamin/calory ratio of 1.7, failed in every instance to show either motor or sensory improvement. The subjects in group B, given the same diet plus a supplement of vegex by mouth sufficient to increase the vitamin/calory ratio to 3.6, showed as a group definite but moderate improvement. The subjects in group C, who received a vitamin rich diet which, supplemented by vegex, contained a vitamin/calory ratio of 6.8, showed more rapid and decided improvement than the subjects in group B. The vitamin B adequacy of the three groups may be stated as follows: group A, borderline; group B, approximately twice the predicted requirement; group C, approximately four times the predicted requirement. The degree of improvement was therefore roughly proportional to the vitamin B intake. The contention that the amount of vitamin B intake decisively governs the degree of improvement is valid in groups A and B. The only difference in the regimen of these two groups was that subjects in group B were given 18 Gm. of vegex daily, while subjects in group A received either autoclaved vegex or no vitamin B supplement. Vegex is a complex preparation of autolyzed brewers' yeast containing, in addition to vitamin B, vitamin G, which now is thought [15] to

TABLE 4.—*Changes in Objective Neurologic Signs of Peripheral Nerve Involvement in Five Subjects on Various Forms of Therapy*

			Motor						Sensory				Results	
			Deep Tendon Reflexes											
Case	Treatment	Day	Ankle	Knee	Biceps	Triceps	Foot Drop	Wrist Drop	Vibratory	Position	Calf Tenderness	Skin Sensitivity	Motor	Sensory
6	V/C 5.5	0	0	0	0	0	+	+	Pel.	T	+	ML		
	plus vegex	34	0	0	+	0	N	N	Pel.	T	N	A	I	I
5	V/C 1.7	0	0	0	0	0	+	N	Pel.	A	+	P		
	plus B_1 concentrate	72	0	0	0	0	+	N	Pel.	A	+	P	U	U
7	V/C 1.7	0	0	0	+	+	+	N	K	N	+	K		
	plus 50 mg. B_1	2	0	+	+	+	N	N	N	N	N	N	I	I
		6	0	+	+	+	N	N	N	N	N	N	I	—
	V/C 5.5	9	0	+	+	+	N	N	N	N	N	N	U	—
	plus vegex	16	0	0	+	+	+	N	T	N	+	ML	W	W
	V/C 5.5 plus vegex plus 20 mg. B_1	19	0	+	+	+	N	N	N	N	N	N	I	I
	V/C 5.5 plus vegex	26	0	+	+	+	N	N	N	N	N	N	U	—
4	V/C 1.7	0	0	0	+	+	N	N	Pel.	T	+	ML		
	plus autoclaved vegex plus 140 mg. B_1	3	0	0	+	+	N	N	K	N	+	P	U	I
		14	0	+	+	+	N	N	A	N	N	N	I	I
24	High vitamin diet	0	0	0	+	+	N	N	N	N	N	N		
		50	0	0	+	+	N	N	N	N	N	N	U	—
	plus vegex	127	0	0	+	+	N	N	N	N	N	N	U	—
	High vitamin diet plus vegex plus 90 mg. B_1	137	0	+	+	+	N	N	N	N	N	N	I	—
	High vitamin diet plus vegex	167	0	+	+	+	N	N	N	N	N	N	U	—

B_1 concentrate (Eli Lilly & Co.) 10,000 mg. equivalent daily.
Mg. B_1 refers to crystalline B_1 (Merck & Co., Inc.).
Vegex always used in 18 Gm. amounts daily.

15. Birch, T. W.; György, Paul, and Harris, L. J., The Vitamin B_2 Complex: Differentiation of the Antiblacktongue and the "P-P" Factors from Lactoflavin and Vitamin B_6 (So-Called "Rat Pellagra" Factor), Parts I-VI, Biochem. J. **19**: 2830-2850 (Dec.) 1935.

consist of several fractions such as the pellagra preventive factor, the anti-black tongue factor, lactoflavin, and vitamin B_6. In autoclaving this product we may have destroyed or impaired another fraction in addition to vitamin B. It may be suspected that the failure of patients in group A, who received autoclaved vegex, to improve was due to the destruction of this other factor, and that the response of the subjects in group B was due to its presence in the unheated vegex. That this is not the true explanation is shown by the course of subjects 4 and 7, who responded with improvement when the basal diet, or the basal diet plus autoclaved vegex, was supplemented by crystalline vitamin B_1. If the improvement of patients in group B were due to another fraction than vitamin B, it would not have occurred in subjects 4 and 7. The failure of subject 7 (table 4) to maintain the improvement that occurred after 50 mg. of crystalline vitamin B_1 was given with the basal diet, and her maintaining the improvement that occurred after 20 mg. of crystalline vitamin B_1 was given with the vitamin rich diet supplemented by vegex, and the permanent improvement of subject 4 after 140 mg. of crystalline vitamin B_1 was administered with the basal diet supplemented by autoclaved vegex suggests that some factor may be present in both autoclaved and unheated vegex which in itself is not curative but which, when present with adequate amounts of vitamin B, augments the curative properties of the latter.

TABLE 5.—*Summary of Changes in Objective Neurologic Signs of Peripheral Nerve Involvement in Groups A, B, and C Within Twenty-One Days*

	No. of Cases	Vitamin/Calory Ratio of Diet	Worse		Unimproved		Improved	
			Motor	Sensory	Motor	Sensory	Motor	Sensory
Group A	7	1.7	1	3	6	4	0	0
Group B	8	3.6	0	0	3	1	3	7
Group C	13	6.8	0	0	3	2	10	11

Patients in group C, whose vitamin B intake was approximately four times their requirement, showed more decided improvement than those in group B, who received only two times their vitamin B requirement. For example, in patients in group B, absent ankle jerks were not observed to return within twenty-one days, while in patients in group C, absent ankle jerks returned within twenty-one days in five of the thirteen subjects.

While we are justified in attributing the better response of patients in group B than those in group A to vitamin B, the still better response of the patients in group C cannot with certainty be attributed solely to the increase in vitamin B. The diet in group C contained 50 per cent more calories and an equal increase in protein. Vitamins A, D and C were also present in larger amounts than in the diet of groups A and B. When we increased the vitamin B content from around 3,000 mg. equivalent in the diet of groups A and B to 17,000 mg. equivalent in the diet of group C, we also increased other fractions of the vitamin B complex. In this connection the observation of Elsom[16] is significant: ". . . vitamin fractions contained in yeast were necessary in addition to preparations of vitamin B_1 and B_2 for complete relief from the changes which accompanied deficiency" in the vitamin B complex. This clinical observation is confirmed by deficiency experiments. When separate fractions of the vitamin B complex are added to a diet lacking in the entire vitamin B complex, there occurs a temporary increment in weight which is not maintained until all necessary factors are included in the diet.

It is difficult to account for the failure of subject 7 to maintain the improvement produced by 50 mg. of crystalline vitamin B_1 administered by parenteral injection. Before and during this therapy the patient received the basal diet. From the day following the last administration of crystalline vitamin B_1 she was given the vitamin rich diet supplemented by vegex. In spite of this, regression occurred within a week. To the vitamin rich diet plus vegex we then added within two days 20 mg. of crystalline vitamin B_1. The prompt improvement which followed this time has been maintained over a period of eight months of observation. Our previous suggestion that some factor may be present in both autoclaved and unheated vegex which, while not curative in itself, augments the curative action of vitamin B may be the correct explanation of the relapse. On the other hand, the explanation may be a temporary failure of this patient to absorb the vitamin B given by mouth during the week between the end of the first and the beginning of the second period of crystalline vitamin B_1 therapy.

The failure of subject 5 to respond by improvement after seventy-two days of treatment with the basal diet supplemented by the oral administration of 10,000 mg. equivalent of a vitamin B concentrate does not mean that this preparation is without value. We have treated two subjects [17] having gestational polyneuritis, also due to vitamin B deficiency,[18] with this preparation, with excellent results. Furthermore, subject 5 had a very severe polyneuritis and may represent a group of subjects in whom the pathologic changes have advanced so far as to be irreversible. Another explanation may be that her polyneuritis was on a different etiologic basis, a possibility to which we have referred in a previous study.[9]

Failure of the tendon reflexes to return after a few weeks or months of vitamin B therapy by mouth does not necessarily indicate that they will be permanently absent. The knee jerks in subject 24, after 221 days of known absence, returned when the vitamin rich diet was supplemented for nine successive days by the daily intravenous administration of 10 mg. of crystalline vitamin B_1.

SUMMARY

We have observed twenty-eight alcohol addicts having uncomplicated polyneuritis who were given diets containing slightly inadequate or barely adequate quantities of vitamin B, or diets containing either approximately two times or four times the estimated vitamin B requirement. Those receiving borderline amounts of vitamin B showed no improvement in the objective signs of peripheral neuritis over a period of a month. Two of these subjects were then given crystalline vitamin B_1 by intravenous injection, with dramatic response in one and a good response in the other. Subjects treated with a vitamin B intake approximately twice their predicted requirement showed improvement, but not as rapidly or in equal degree as those receiving four times their vitamin B requirement. We have discussed the relation of alcohol to the etiology of polyneuritis, and the possibility of a fraction in the vitamin

16. Elsom, K. O.: Experimental Study of Clinical Vitamin B Deficiency, J. Clin. Investigation **15**: 40-51 (Jan.) 1935.

17. Unpublished observations.

18. Strauss, M. B., and McDonald, W. J.: Polyneuritis of Pregnancy: A Dietary Disorder, J. A. M. A. **100**: 1320-1323 (April 29) 1933.

V 107
1936

B complex other than vitamin B itself augmenting the action of vitamin B on polyneuritis in the alcohol addict. We conclude that

1. Alcohol per se is not the cause of polyneuritis in the alcohol addict.

2. Vitamin B deficiency is a cause of polyneuritis in the alcohol addict.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. BLANKENHORN AND SPIES AND DRS. JOLLIFFE AND COLBERT

DR. H. B. MULHOLLAND, University, Va.: Until recently the etiology of polyneuritis in chronic alcoholism was thought to be due to the effect of the alcohol on the nervous tissues. The work of Strauss and others demonstrated an improvement in the symptoms and signs of nervous lesions occurring in alcoholic addicts in spite of the continuance of an average alcohol intake, when the patients were put on adequate diets. This is further amplified by these authors, who in a new and ingenious method of attack have apparently shown that vitamin B is quantitatively concerned in the etiology and cure of this condition. I am interested in the fact that in order to obtain satisfactory results it is often necessary to give patients many times the average requirement of vitamin B. This fact has been shown to be true in other deficiency syndromes. It is therefore possible that the factors of absorption and storage may play an important part in the development of deficiency states. An example is the case which responded to the intravenous administration of crystalline vitamin B_1 after not having shown any improvement on a very high intake by mouth. A case of chronic alcoholism recently observed in our hospital presented the picture of macrocytic anemia and symptoms of peripheral neuritis. The reflex changes were of a minor degree, and the lesions cleared up so promptly on the administration of liver and adequate diet that I believe this is another evidence of a deficiency neuritis complicating pernicious anemia in a chronic alcoholic patient. I wonder whether the authors have observed any such cases with macrocytic anemias in their series. The whole question of peripheral neuritis should be reopened and resurveyed in the light of recent work; for instance, peripheral neuritis complicating diabetes and other diseases. The importance of mouth lesions occurring in deficiency diseases, particularly those associated with the vitamin B complex, has just recently been recognized. Indeed, in pellagra these lesions may be used as a guide to the efficacy of therapy. The authors have called attention to a common condition occurring in chronic alcoholic patients which, if treated by adequate dietary measures, may preclude the advent of more serious deficiency states. The lesions described are certainly rather typical of pellagra as seen in the nonalcoholic patient. These two papers seem to carry important therapeutic implications in the treatment of chronic alcoholism.

DR. TOM SPIES, Cincinnati: I cannot agree with Drs. Jolliffe and Colbert that their conclusions concerning vitamin B have been established. The present status can be approached best from a historical standpoint. Lettsom in 1787 first described alcoholic polyneuritis and attributed it to a neurotoxic effect of the alcohol. This belief was not seriously questioned until 1928. The first controlled information occurred by accident when Dr. De Wolf and I were studying the relationship between chronic alcoholism and the development of alcoholic pellagra. We observed that the neuritis did not progress in patients taking large quantities of whisky if they ate large amounts of food. Dr. Strauss, using the same method, showed subsequently that alcoholic neuritis unaccompanied by pellagra responded in a similar manner. Later, Dr. Blankenhorn and I treated fifty cases of alcohol polyneuritis, some with and some without pellagra. Their cure was reported in May 1935. At that time we stressed the therapeutic value of a high caloric, well balanced diet supplemented by large amounts of the vitamin B complex in the form of yeast, liver extract or wheat germ. Drs. Jolliffe and Colbert added the next step by attempting to establish a quantitative relationship between the number of calories and the amount of the vitamin B complex in the diets of these people. Such a relationship had already been established in animals by Dr. Cowgill. In my opinion, Drs. Jolliffe and Colbert have not proved their point. First, their method of calculating the dietary intake is open to criticism. They failed to consider that the alcoholic addict is interested only in drink and will lie and throw food away to avoid eating. Second, they take alcohol away from people who are accustomed to large amounts. Third, they give these patients physical therapy, which in itself sometimes aids in the treatment of polyneuritis. Fourth, the studies are sufficiently long to allow a possible deficiency of certain other portions of the diet to arise. I believe that vitamin B_1 has something to do with alcoholic polyneuritis, but I also feel that it is not the only factor involved. From my studies it seems that the more restricted diets require larger supplements of the vitamin. The contribution of Drs. Jolliffe and Colbert is significant and I am sure that they will soon put the study on a more scientific basis.

DR. NORMAN JOLLIFFE, New York: In answer to Dr. Mulholland's question concerning macrocytic anemias in these patients, we found in 100 consecutive cases of polyneuritis that about one third showed a macrocytic anemia. As to the points made by Dr. Spies: We are aware that alcohol addicts as a group give unreliable histories, that they are liars, and that they frequently have memory impairment. For this reason I wish to reemphasize our method of judging the accuracy of histories. We chose patients that seemed to us likely to give a reliable history; and then only about one in ten would give us the same history on several successive days. If the history of those who did this could be confirmed by relatives or friends, we would accept that history as true. If our error in estimating the diet was as great as 50 per cent, in only one subject would the vitamin B intake be changed sufficiently to be an exception to our conclusions. As to physical therapy, all three groups received it, and this factor, if it played a curative rôle, was constant. The diet may be restricted, as Dr. Spies has brought out, so much that even crystalline vitamin B_1 will not cause a response. That was shown in one of our patients (case 7). This patient for seventy-four days was given the basal diet. Fifty milligrams of crystalline vitamin B_1 caused only a temporary though dramatic improvement. But 20 mg. of crystalline vitamin B_1 given to the same patient while on a vitamin rich diet was followed by permanent improvement. Another subject (case 4) who received the basal diet plus autoclaved vegex responded permanently following crystalline B_1. This leads us to believe, as Dr. Spies suggested, that other factors present in the B complex influence the curative response to crystalline B_1. This phenomenon occurs in the experimental animal that is deprived of the entire vitamin B complex. When separate fractions of the B complex are added, only a temporary response occurs. Add a second fraction, and again a temporary response follows. A permanent response is not established until all fractions of the vitamin B complex are added to the diet. I believe this is the explanation for the failure of crystalline vitamin B_1 to maintain a permanent response in subject 7 on the incomplete diet.

DR. M. A. BLANKENHORN, Cincinnati: I can construe Dr. Mulholland's discussion as a question directed to our paper about macrocytic anemia and answer it with practically the same answer that Dr. Jolliffe does; that is to say, among our patients that were reported as having pellagra, a large number were found to have macrocytic anemia. I am grateful to Dr. Mulholland for making the statement that these mouth lesions in the condition we have described here greatly resemble the pellagra of the South. In presenting this question of sore mouth in chronic alcoholism, we have avoided almost too carefully the word "pellagra" because of the psychology of medical minds. When we describe the condition as pellagra, the doctors of the North will say "Pellagra is a disease of the South and we do not have it in this community and there is no use looking for it." When we speak of this disease in the South, the doctors say "That is alcoholism, and it is quite different from the pellagra we have in the South." We welcome the opinion, therefore, that the two conditions are identical. I will close by reiterating the point emphasized yesterday by Dr. Carlson, that the early recognition of deficiency states is not scientific and is still in the realm of the practicing physician who sees and looks for minutiae.

LIP READING AND THE INTELLIGENCE QUOTIENT OF THE HARD OF HEARING CHILD

APHRODITE J. HOFSOMMER, M.D.
WEBSTER GROVES, MO.

Recent surveys in the public school system of the United States revealed that three million of the fifty million school children, or 6 per cent, have imperfect hearing.[1] Also it is believed that deafness is on the increase despite the rapid progress made by all institutions interested in checking this defect.

Why should educational institutions be concerned with the hard of hearing child? Because his handicap segregates him from the normal child, making him less fit to develop into a helpful citizen in his adult years.

This paper is a preliminary presentation of the scholastic and personality changes attendant on the irremediably hard of hearing child. Although he may not realize it, much of ordinary conversation is missed at home, at school and at play. His parents nag him for inattention and his teachers brand him "hard to teach."

He often develops an inferiority complex or becomes an introvert with its usual characteristics, or an aggressive bully, bidding for the center of attraction by lying, stealing and so on.

In the class room his chances are, no doubt, less than those of his fellows. His mental tests reveal a low intelligence quotient. He is labeled "stupid." But is he stupid? Is it possible that a child whose educational experience from early years has been narrowed by a handicap in hearing the voices of parents, playmates and primary teachers can have acquired the knowledge that is necessary to answer the questions that constitute the mental tests?

Later in this paper will be cited specific cases bearing out the belief that the low intelligence quotient of the deafened child is often due to lack of hearing experience and not to deficient mentality.

If, then, the hard of hearing child is not early recognized as such and helped, he falls behind in the class room. Statistically, there are among hard of hearing children three times as many repeaters as among their normal companions.[2]

In the public schools of Webster Groves, in St. Louis County, the following program has been in effect for the past four years:

During the first two months of the school year every child from the third grade through high school is tested with the 4-A phonographic audiometer. With this instrument it is possible to test as many as forty children at one time. Those below the third grade who are believed to be hard of hearing, because of slow progress or personality changes, are tested individually. These youngsters use the head phone in the usual manner but speak the numbers heard instead of writing them. Thus varying degrees of deafness are detected from the very start of school life.

After the test sheets have been checked against the master sheet, the children with a hearing loss of 6 or more dynes in both ears are retested. Those con-

Read before the Section on Pediatrics at the Eighty-Seventh Annual Session of the American Medical Association, Kansas City, Mo., May 14, 1936.

1. Fowler, E. P., and Fletcher, Harvey: Three Million Deafened School Children, J. A. M. A. **87**: 1877 (Dec. 4) 1926.
2. Warwick, H. L.: Hearing Tests in the Public Schools of Fort Worth, Volta Rev. **30**: 641-646, 1928.

TABLE 1.—*Group of Hard of Hearing Instructed in Lip Reading*

Name	Grade in 1935-1936	Prior to Lip Reading Instruction				After 1-2 Years Lip Reading Instruction				After 2-3 Years Lip Reading Instruction				Average Hearing Loss		Comment
		Repeated Grades or Conditioned	I.Q.	C.A. : E.A.	Gain in E.A. During Preceding Year	Repeats	I.Q.	C.A. : E.A.	Gain in Months	Repeats	I.Q.	C.A. : E.A.	Gain in Months	R.	L.	
1. M. H.	IV	None	89	6-9 : 6-0	4 months	None	100	7-9 : 7-8	20 months	None	100	8-3 : 9-8	24 months	9	6	Lower social strata
2. W. S.	V	Conditioned once	76	7-11 : 8-3	6 months	None	...	8-11 : 9-3	12 months	None	104	9-11 : 11-5	26 months	27	3	Introvert
3. M. E.	V	Conditioned once	77	7-11 : 8-3	5 months	None	...	9-4 : 8-8	5 months	None	140	12-6 : 17-6	24 months	27	12	Foster home
4. T. B.	IV	Repeated once	93	9-4 : 9-3	8 months	None	96	11-4 : 10-6	7 months	None	...	..... :	.....	18	21	Nerve deafness; father criminal
5. H. P.	V	Repeated once	94	9-4 : 8-3	5 months	None	94	10-1 : 10-9	4 months	None	...	11-1 : 11-9	12 months	0	18	Foster home; mother criminal
6. O. R.	VI	No early data	76	12-7 : 10-7	.....	None	67	13-7 : 10-8	1 month	None	...	..... :	.....	18	18	Uncorrected defective vision
7. J. Z.	VI	Conditioned once	84	9-0 : 8-11	8 months	None	93	10-0 : 10-3	16 months	None	100	11-0 : 10-8	5 months	9	12	Special promotion after 1 year L. R.
8. J. G.	VII	None	89	10-9 : 11-4	.....	None	88	11-5 : 12-7	15 months	None	...	..... :	.....	15	18	Antischool complex
9. M. C.	VII	Repeats three	79	11-4 : 10-4	—10 months	None	97	12-5 : 11-9	17 months	None	...	..... :	.....	9	6	Lower social strata
10. E. M.	VII	None	116	8-8 : 10-6	7 months	None	115*	10-9 : 12-3	16 months	None	104	11-9 : 14-8	17 months	0	deaf	Upper social strata
11. E. S.	VIII	Conditioned twice	82	12-4 : 11-9	7 months	None	80*	13-7 : 12-4	7 months	None	79	..... :	.....	12	3	Irregular attendance to lip reading
12. G. H.	VIII	None	106	10-11 : 11-9	12 months	None	101	12-3 : 13-7	14.5 months	None	...	..... :	.....	6	24	Regular attendance to lip reading
13. M. D.	IX	None	103	11-9 : 11-4	9 months	None	103	13-0 : 13-5	12 months	None	...	..... :	.....	3	21	Lower social strata
14. E. H.	IX	Conditioned once	87	11-3 : 11-11	11 months	None	89	12-8 : 13-7	12 months	None	93	15-9 : 14-8	13 months	deaf	0	Irregular attendance to lip reading
15. D. O.	IX	None	102	11-8 : 11-2	8 months	None	102	13-0 : 13-7	17 months	.....	...	..... :	.....	12	—3	Regular attendance to lip reading
16. H. S.	XII	Repeated twice	95	Lower third of class		.....	...	..... :	.....	None	96	Middle third of class		15	15	Very conscientious lip reader
17. W. W.	XII	Repeated twice	96	Lower third of class		None	110	Middle third of class		None	106	Upper third of class		18	12	Great personality improvement

* Dropped lip reading at this point.

sistently showing a hearing loss then receive a special examination of nose, throat and ears by the school medical inspector to eliminate impacted cerumen. A further check on hearing is made with the 2-A audiometer through cooperation with the Central Institute for the Deaf in St. Louis. The audiograms of these tests are filed with the school records and compared with subsequent audiograms. Parents are notified of the hearing loss and advised to consult an otologist for correction when possible. Meanwhile lip reading instructions are begun by teachers trained at the Central Institute for the Deaf of St. Louis.

After one or two years of such instruction, remarkable results were noticed in this group of children. The class room teachers and principals stated that the children were more attentive and had improved in reading, the ability and progress of the child. A child's educational age should show a gain of at least twelve months in a year's time.

C. A., or chronological age, is determined from the birth date. It automatically increases twelve months in a year.

I. Q. is the intelligence quotient, a ratio of the chronological age to the mental age. In normal children the intelligence quotient remains fairly constant throughout school life. A variation of from 5 to 10 points may be encountered. In cases in which no data are supplied, school records were incomplete.

The intelligence quotients prior to instruction in lip reading are generally lower in table 1 than in table 2, since the deafness in this first group was of longer duration.

TABLE 2.—*Group of Hard of Hearing Children with No Lip Reading Instruction*

		Prior to Lip Reading Instruction				1-2 or 3 Years Later						
Name	Grade in 1935-1936	Repeated Grades or Conditioned	I.Q.	C.A. : E.A.	Gain in E.A. During Preceding Year	Repeats	I.Q.	C.A. : E.A.	Gain in E.A. Preceding School Year	4 Years Later, I.Q.	Hearing Loss R.	Hearing Loss L.	Comment
1. B. J.	IV	Repeat 2; conditioned 2	60	10-2 : 6-11	0	Moved	...	.....	.....	..	21	3	Poor home conditions
2. J. A.	IV	None	116	8-6 : 8-8	5 mos.	None	104	9-1 : 9-11	6 mos.	..	deaf	0	Physician's son
3. W. S.	IV	Repeat 1; conditioned 1	124	8-2 : 7-5	.....	Cond. 1	99	9-2 : 7-9	4 mos.	..	3	18	Called "lazy" by teachers
4. C. R.	V	Repeat 2	89	9-10 : 8-3	12 mos.	Cond. 1	75	10-10 : 9-4	13 mos.	..	18	9	Antischool complex
5. G. T.	V	None	111	8-3 : 7-4	10 mos.	None	88	9-10 : 10-1	6 mos.	..	18	6	Introvertism
6. G. B.	VI	Repeat 1; conditioned 2	98	8-11 : 7-9	16 mos.	Cond. 1	90	11-11 : 11-0	4 mos.	..	9	9	Foster home
7. C. P.	VII	Repeat 2	67	11-9 : 8-8	0 mos.	Repeat 1	68	14-0 : 9-4	3 mos.	..	12	9	Enlarged tonsils; adenoids
8. B. C.	VII	None	124	9-6 : 11-5	16 mos.	None	111	11-5 : 14-1	14 mos.	..	27	0	Upper social strata; medical care
9. W. W.	VIII	None	109	8-10 : 10-5	20 mos.	None	106	10-10 : 11-10	17 mos.	..	deaf	3	Upper social strata; medical care
10. A. M.	X	None	106	11-4 : 10-6	12 mos.	None	98	14-0 : 13-7	12 mos.	..	deaf	6	Nerve deafness
11. M. H.	X	Repeat 1; conditioned 1	85	13-1 : 9-6	.....	None	80	16-0 : 12-11	0 mos.	80	0	deaf	Attended lip reading a few times—reluctantly
12. B. V.	X	None	150	11-1 : 15-0	28 mos.	None	150	14-5 : 18-8	20 mos.	..	15	15	Extreme introvertism
13. K. D.	X	Repeat 2	87	10-9 : 11-6	6 mos.	None	89*	11-6 : 13-3	9 mos.	77	15	9	Extreme introvertism
14. M. W.	XII	No early data	107	Middle third of class			96	Lower third of class		84	0	15	Introvertism; tuberculosis in first grade
15. M. S.	XII	No early data	105	Lowest third of class			105	Middle third of class		87	deaf	0	Personality problem
16. F. S.	XII	Repeat 2	94	Lowest third of class			...	Lower third of class		85	15	18	Behavior problem

* Nine month period.

in other subjects and, no less important, in behavior. Teachers' marks showed an advance in a majority of the cases, a rather significant fact, since previous to lip reading training 37.5 per cent of these children had been retained in the same grade one or more years, and 31.2 per cent were conditioned.

TABLE 3.—*A Group of Seventeen Hard of Hearing Children Taking Lip Reading and Sixteen Hard of Hearing Children Not Taking Lip Reading*

	Lip Reading		No Lip Reading	
	Number	Per Cent	Number	Per Cent
Definite elevation of I. Q.	8	47.0	0	0
No elevation of I. Q.	7	41.1	3	18.7
Fall in I. Q.	2	11.7	12	75.0
No data	0	0	1	6.2
Class room improvement	13	76.4	3	18.7
No class room improvement	3	17.6	6	37.5
Lowering of class room work	1	5.8	6	37.5
No data	0	0	1	6.2

The accompanying tables are a comparison of a hard of hearing group of children who were instructed in lip reading, with a hard of hearing group who refused lip reading owing to lack of parental cooperation or to unwarranted prejudice or advice.

E. A., or educational age, is the figure derived from a composite of subject ages on the Stanford achievement tests. It is probably the best measurement of

CONCLUSION

1. The education of the unassisted hard of hearing child is an interrupted learning, an imperfect acquisition of knowledge.

2. The hard of hearing child should not be segregated from the public school class room, but lip reading should be a part of the curriculum.

3. The hard of hearing child in a majority of cases has a low intelligence quotient because of lack of educational experience and not because of deficient mentality.

4. Lip reading was given in the public schools of Webster Groves, St. Louis County, to a group of hard of hearing children. After from one to three years 47 per cent showed an increase in their intelligence quotient, 41.1 per cent showed no change, and 11.7 per cent showed a drop in their intelligence quotient. In 76.4 per cent definite class room improvement was made, and all showed marked betterment in behaviorism.

5. In contrast, another group of hard of hearing children who refused lip reading showed no increase in their intelligence quotient during the same period, but 75 per cent showed a drop; only 18.7 per cent made class room improvement, and all were character problems.

COMMENT

I have tried by collecting these numerical data and by watching the change in this group of children for three or four years to establish an interest in the need for lip reading in the public schools. Its purpose will certainly be a benefit to the child himself, and secondarily, no less important, to the community. The cost of lip reading should not be considered, since each repeater is an expense of from $80 to $100 a year to a board of education. Therefore it is obvious that it will not take very many repeaters made into nonrepeaters to cover not only the cost of lip reading but very likely the cost of the entire school health program.

639 Lee Avenue.

ABSTRACT OF DISCUSSION

DR. HORACE NEWHART, Minneapolis: The otologist has long regarded the pediatrician as his closest ally in promoting deafness prevention and amelioration, because of his success in reducing the incidence of the diseases of childhood that cause impairment of hearing. I would emphasize two points related to this subject. The first is the importance of the early discovery of the potentially deafened child, who is most easily overlooked and neglected. The obviously hard of hearing receive attention as a matter of course. The young child having a slight but significant hearing impairment, which is often the cause of retardation, a speech defect, an inferiority complex or even unusual behavior is frequently overlooked by both parents and teachers. Only recently has the urgent need of discovering his defect in time to give him the benefit of early medical and educational corrective measures been realized. This has been made possible by the incorporation of the periodic testing of the hearing acuity by means of the audiometer in the school health program. In several hundred communities this has been undertaken with very satisfactory results. In Minneapolis, where the tests have been made as a routine during the past nine years, there has been noted a drop in the incidence of a significant hearing loss among the school population from 8 per cent to 4 per cent. This, we believe, is due largely to a growing ear-consciousness among parents. A second point to emphasize is the need of early detection of a severely handicapping hearing loss in the infant and the preschool child because of the educational problem involved. Here the physician carries a large responsibility. A survey of pupils in schools for the deaf in Minnesota by audiometric tests showed that a surprising number had residual hearing of such a degree that with early discovery and the help of a modern hearing aid they might have received their education in their home communities with normal hearing children and avoided the speech defects which made necessary their admission to special schools. Infants and young children who do not respond to the cochleopalpebral test are mouth breathers, have a high palatal arch, fail to acquire normal speech, have frequent colds or cervical adenopathy, and should receive early otologic scrutiny. Parents of aurally handicapped children may obtain gratuitously helpful advice regarding their home care from our two national organizations for the deaf and hard of hearing—the American Society for the Hard of Hearing and the Volta Bureau, both of Washington, D. C.

DR. HORTON R. CASPARIS, Nashville, Tenn.: Dr. Hofsommer has brought to us a subject that is important even beyond the specific phase of it that she discussed; namely, the difficulties arising out of hardness of hearing. We get children who are not recognized as deaf or hard of hearing, who fail and have to turn to other channels, because they can't keep up with their colleagues in school, and that is difficult enough. But I think she struck a note that is broader and should appeal to pediatricians, namely, that the mind must be exercised just as any other part of our body, if it is to remain potent; to the extent that there is a handicap, we don't get the normal flow of physical activities and hence don't maintain the normal development of our mental functions, which I think is important. We see it in other phases of handicap than deafness, although deafness is a very severe one.

A CHILDREN'S HOSPITAL FOR NEUROLOGIC AND BEHAVIOR DISORDERS

CHARLES BRADLEY, M.D.
EAST PROVIDENCE, R. I.

In spite of an ever widening interest among pediatricians and neuropsychiatrists in the neurologic and behavior disorders of childhood, hospitals adequately equipped for the study and treatment of patients with such conditions are few and far between. The majority of general and children's hospitals, designed primarily for bed patients with acute disorders, are not prepared to go beyond the stage of diagnosis for children with many chronic neurologic complaints and make no pretense of dealing satisfactorily with active ambulatory children whose behavior demands prolonged treatment. A very limited number of psychiatric hospitals have during the past ten years done pioneer service by establishing wards for problem children.[1] However, no hospital planned and equipped especially for the care of children with neurologic and behavior disorders existed until the Emma Pendleton Bradley Home was opened in 1931 at East Providence, R. I. In this paper, I wish to deal briefly with the experiences encountered during the first five years' operation of this unique institution.

GENERAL DESCRIPTION OF THE EMMA PENDLETON BRADLEY HOME

A semirural location was judiciously selected for the site of the project. The hospital itself occupies an attractive colonial brick building of generous capacity constructed for the purpose and situated in the midst of a 40 acre tract of land largely wooded. Ample playing fields provide natural facilities for children's sports at all seasons, and the absence of close neighbors has eliminated many problems that might arise in congested quarters. Provision for equipment and staff to supply every need of normal child life, as well as the more orthodox clinical and laboratory requirements of a fifty-bed hospital, have made the institution virtually a complete children's community. Special features have been the inclusion of a psychologic laboratory adapted to the investigation of children's problems and a school staffed with specially trained teachers.

The Bradley Home was planned as a hospital for investigation and treatment as opposed to a home for custodial care or a training school. For this reason relatively few children with an obviously hopeless mental defect or with advanced deterioration have been admitted. Initial questions as to what types of patients would appear for treatment in such a hospital may now be answered in the light of considerable experience (table 1). Of 269 patients who have been admitted, eighty have presented behavior problems, sixty-four convulsive disorders, forty birth injuries of the central nervous system, thirty-seven mental deficiency, and the remainder a variety of disorders such as chorea, specific reading disability, postencephalitic syndrome, and mus-

Read before the Section on Nervous and Mental Diseases at the Eighty-Seventh Annual Session of the American Medical Association, Kansas City, Mo., May 15, 1936.

1. Bond, E. D., and Appel, K. E.: The Treatment of Behavior Disorders Following Encephalitis, New York, Commonwealth Fund, 1931. Klopp, H. J.: The Children's Institute of the Allentown State Hospital, Am. J. Psychiat. **11**: 1107 (May) 1932. List, W. E., and Rosenthal, Mrs. W. M.: The Child Guidance Home as a Factor in Mental Hygiene, Mod. Hosp. **42**: 87 (April) 1934. Hoffman, H. F.: A Study of Fifty State Hospital Children, Tr. Am. A. Ment. Def. **39**: 273, 1934. Potter, H. W.: A Service for Children in a Psychiatric Hospital, Psychiat. Quart. **8**: 16 (Jan.) 1934.

V 107
1936

cular dystrophy. All were referred directly by physicians and the majority were patients for whom treatment had been tried unsuccessfully elsewhere.

PATIENTS WITH NEUROLOGIC DISEASES

Convulsive Disorders.—In reviewing experiences with various types of patients who have come under observation, those with convulsive disorders merit early consideration. There are certainly a great many children in all walks of life with convulsive disorders who are being adequately and successfully treated at home without interfering with their schooling or social development. There are others, however, for whom therapy is carried out at the expense of many childhood activities, and still others for whom no treatment in the community proves successful. It is for patients of the latter two groups that a special children's hospital should have most to offer, and as a matter of fact it is mainly such children who have been treated at the Bradley Home. Here hospitalization has not only permitted thorough medical and dietary treatment but has eliminated such precipitating psychogenic factors as may have been present in the patient's home. Moreover, it has provided schooling and permitted full participation in other normal activities of childhood during the treatment period.

Although the group treated has, in general, consisted of patients for whom home treatment had failed, therapeutic results in the hospital have been reasonably encouraging. Unfortunately, space does not permit me to present the detailed analysis which is quite necessary for any intelligent statistical discussion of such cases. It may be noted in passing, however, that of fifty consecutive children with convulsive disorders for whom hospital treatment was completely carried out, nineteen were entirely free from seizures at the time of discharge, eleven were partially improved, and twenty did not respond to treatment.

Cerebral Palsy.—Recently the writings of Carlson [2] Doll [3] and others have aroused considerable interest in the treatment and education of the so-called spastic group of birth injured children. Patients of this type who are to receive treatment should be selected with great care, as even the most intensive efforts will be relatively unproductive of results if the child suffers from the mental deficiency so common in this group. Accurate measurement of the intellectual status is often difficult because of the frequency with which motor and speech disturbances render customary psychometric tests unreliable for these children.

In special quarters at the Bradley Home a relatively small group of carefully selected, intelligent children have been given prolonged and comprehensive treatment. A wide use of playthings, apparatus and group games supplementing formal physical therapy, school and speech classes have rounded out training not only in motor control and strength but also in social adaptability and in finding satisfactory outlets for self expression. The development of self confidence, which accompanies improvement, is most important for the future progress of these children. It is hard to visualize such thorough treatment being carried out elsewhere than in a specially adapted hospital or school with a staff of nurses selected for their technical skill, patience, optimism and ingenuity. While no scale exists by which the relative value of this therapy can be gaged, the response of these selected patients to such a program is by no means discouraging.

Other Chronic Neurologic Disorders.—Patients with a variety of other neurologic disorders and myopathies have come under observation, but in no single group large enough to warrant any conclusions from the treatment. Research among these patients at the Emma Pendleton Bradley Home is particularly attractive because of the availability of the children for prolonged close observation. Whether or not research or treatment is productive of results, the victims of these crippling diseases are meanwhile attending school and enjoying participation in normal childhood activities to a much greater extent than would have been possible at home in the community.

BEHAVIOR PROBLEM CHILDREN

In turning to the hospital treatment of children whose difficulties lie in the field of behavior, it is possible to supplement the excellent discussions of Potter,[1] Lurie [4] and others by presenting a few striking experiences:

Value of Environment.—There would seem to be little argument that in adequately providing for the care of ambulatory behavior problem children a great deal of attention should be focused on the environment. This consists of far more than merely providing hygienic and attractive living quarters. At the Emma Pendleton Bradley Home, where the semirural location at once offers a natural setting for many children's activities, every effort has been made to develop an environment and a program for its use, duplicating the best advantages of the modern community. Specifically this has included not only ample provision for all outdoor sports but also complete school facilities with supervised recreation, including scouting activities for both boys and girls, educational trips to nearby points of interest, picnics and camping excursions, the use of a library, woodworking classes, a harmonica band, and many other features. The nurses and teachers who have been of most assistance in developing and carrying out such a program have combined the rare endowment of an attractive, unruffled and ingenious personality with extensive experience among normal active children. Probably only in the presence of the constructive attitudes that such a staff shows could this program surround the patient with a noninstitutional atmosphere which does not constantly remind him that he is ill, and also renders his transition into and out of the hospital as gentle as possible.

TABLE 1.—*Primary Diagnoses of Patients Admitted to Bradley Home, April 1931 to April 1936*

Behavior problem	80
Convulsive disorder	64
Birth injuries of central nervous system	40
Mental deficiency	37
Chorea	13
Postencephalitic syndrome	11
Specific reading disability	11
Progressive muscular dystrophy	8
Encephalitis (Schilder's type)	3
Congenital syphilis	3
All others	17
Total primary diagnoses	287
Allowance for patients with more than one diagnosis	18
Total patients	269

2. Carlson, E. R.: Neurological Aspects and Treatment of Birth Injuries, New York State J. Med. **34**: 831 (Oct.) 1934.
3. Doll, E. A.; Phelps, W. M., and Melcher, R. T.: Mental Deficiency Due to Birth Injuries, New York, Macmillan Company, 1932.

4. Lurie, L. A.: The Mental Approach to the Study of Behavior Disorders of Children, Am. J. Psychiat. **91**: 1379 (May) 1935.

As an aid to psychiatric diagnosis such surroundings provide a natural setting wherein the physician may impartially observe and record the patient's reactions to normal childhood situations. These data may so supplement the physician's history and office contacts as to clarify vividly his understanding of a particular behavior problem. This has been repeatedly demonstrated in actual practice.

That this environment may be of direct therapeutic value by offering security, encouragement and an outlet for self expression to a problem child is suggested in a subsequent analysis of the results of treatment. It also makes another though more intangible contribution to the welfare of every patient regardless of diagnosis. This contribution is to the happiness and social development of the child during the long period he must spend in the hospital. The importance of this is apparent when it is noted that children treated at the Emma Pendleton Bradley Home usually remain in the hospital from six to eighteen months.

Individual Psychotherapy.—Even the best environmental adjustment does not preclude the advisability of personal psychotherapy, particularly in cases in which a rather exhaustive analysis and reconstruction of the patient's personality are indicated. The methods of conversational interview, play analysis and interpretation of artistic production have been freely used as dictated by the characteristics and needs of each child. In treating the child as an inpatient, the physician has been able to make his contacts as frequent and of whatever length he chooses. He has been able to alter at will the child's program of activities. Moreover, the hospital files have provided an accurate and permanent record of the patient's reactions to his treatment. Each of these items presents obvious advantages over what is possible in the average mental health clinic.

TABLE 2.—*Analysis of Children with Behavior Problems, April 1931 to April 1936*

Boys admitted for behavior problem	60
Girls admitted for behavior problem	20
Total admitted for behavior problem	80
Patients discharged following adequate treatment	58
Patients discharged following adequate treatment, improved	43
Patients discharged following adequate treatment, unimproved	15

TABLE 3.—*Factors Responsible for Improvement of Forty-Three Patients with Behavior Problems*

Number who improved primarily as result of environment	31
Number who improved primarily as result of individual psychotherapy	12
Total	43

Analysis of Cases.—In a brief and rather superficial analysis of the patients who have been under treatment for behavior disorders (table 2), it is interesting to note that there were exactly twice as many boys as girls in the group. Out of a total of eighty such children, treatment was considered complete in fifty-eight cases. Forty-three of these (74 per cent) were distinctly improved at the time of discharge and fifteen (26 per cent) unimproved. While individual psychotherapy and all other necessary medical treatment was carried out in every case, it is the opinion of the medical staff that environmental influences were more often than not the primary beneficial factors for those patients who responded favorably to their stay in the hospital (table 3). Thirty-one of the improved patients (73 per cent) appeared to owe their improvement primarily to the hospital environment and only twelve (27 per cent) to have owed it to any specific therapy. These results are probably best interpreted as demonstrating what may be accomplished practically by adequate environmental treatment rather than indicating lack of success with personal psychotherapy in such children.

GENERAL COMMENT

In finally scanning the first five years' work of the Emma Pendleton Bradley Home, one is attracted by two or three other salient points:

This experience has lent no support to the theoretical criticism that it is unwise to treat together in a single group children with organic neurologic disorders and those with functional behavior problems only. Neither by imitation nor by irritation have members of either group seriously interfered with their own treatment or that of others. Moreover, the practical convenience of treating together all these patients with obviously similar needs for prolonged therapy, schooling and social development outweighs most theoretical objections to so doing.

Considering the fact that most of the children who were admitted to the hospital represented the more severe types of their particular disorders, it is encouraging that therapeutic results in general have been distinctly favorable.

The beneficial results of a carefully planned environment have been obvious, particularly in the field of behavior disorders. It seems significant that in actually developing this environment many more definite and workable suggestions were received from individuals intimately familiar with healthy children in schools, camps and the like than from those whose training and experience came only from the world of medicine. The implication that many physicians and nurses lack familiarity with the everyday life of active children has led to including prolonged daily contacts with the children in the psychiatric training of all who come to the Emma Pendleton Bradley Home for professional experience.

ABSTRACT OF DISCUSSION

DR. WILLIAM G. LENNOX, Boston: I have visited the Bradley Home. I shall, however, speak only of the care of the epileptic patients. I see the Bradley Home against the background of a half million epileptic persons, 10,000 of whom are in colonies, 30,000 in state psychiatric institutions, and almost all the rest of the 450,000 without any home to go to in case they need hospital or institutional care. The Bradley Home demonstrates the utility of small units, in which incipient or first stage cases of epilepsy can be given medical care in an environment which approximates that of the home. Certain European countries are far beyond us in providing interested care for early cases. In the second place, the home, as an experimental station, can answer certain questions which need to have convincing answers. Here is a group of mentally normal epileptic patients in a good environment and associated with other patients who are mentally normal. Can Dr. Bradley give convincing evidence that epileptic patients are better, as regards their mental health and their personality, than if they had been sent to some state colony or to a psychiatric hospital? On the other hand, here is a group of other handicapped patients with a group of epileptic children among them. Can Dr. Bradley give convincing evidence that these other children are not harmed by being in contact with the epileptic children? In his paper he has given his affirmative opinion on these questions, and it deserves to be widely respected. Yet I hope that in the course of years he can present statistical evidence that will point the way toward the better handling of the serious problem of the social and institutional care of epileptic patients.

DR. WILLIAM NELSON, St. Louis: I wouldn't limit my dealing with the epileptic children to the purely normal children

V 107
1936

so far as psychic capacity is concerned, because many of the children have certain limitations to mental development. I do not believe that the mental limitation is a handicap to social adjustment of the individual, if society recognizes its responsibility and understands the child. I would not relegate children who have lower levels of mentality to a program of nondevelopment, so far as vocation is concerned. One reason for Dr. Bradley's success in this hospital is his personal relationship with the patient. In any group, if the personal relationship and the actual problem of that individual child are removed so far as relationship to him as an individual is concerned, one is going to defeat the purpose of treatment ultimately. In other words, the temporary adjustment that one gets out of children from mere group treatment, without considering individually one's relationship to that child, is going to defeat one in the long run. If I understood Dr. Bradley correctly, he said that his patients stayed in the hospital from six to eighteen months. I can't conclude, after fourteen years of detailed dealing with these problems, that patients can be considered adjusted after eighteen months. Some of them require further care. In my community the project is carried on somewhat differently, with a shorter stay in the home. We are dealing with the problems that Dr. Bradley suggested here, that other people have failed on, the worst problems in our community. Our idea of keeping them in our home is for the purpose of study and treatment until they can adapt themselves in a more individualized sort of environment.

DR. CHARLES BRADLEY, East Providence, R. I.: I wish to thank Dr. Lennox and Dr. Nelson for their discussion. I think our enterprise is too young to draw any conclusions, except that it has worked pretty well so far. As regards the time of treatment for behavior problem children, I like to look at institutional treatment as you do at any hospital treatment. The job of the physician is to get the patient out as soon as possible and, of course, to keep in touch with him and treat him as long as necessary thereafter.

MEDICAL ASPECTS OF ACCIDENT CONTROL

LEVERETT D. BRISTOL, M.D., DR.P.H.
Health Director, American Telephone and Telegraph Company
NEW YORK

The prevention and control of accidents depend on the cooperative efforts of public authorities, governmental agencies, industrial management and employees, insurance companies, technical societies, safety engineers, physicians and nurses, as well as on the public in general. Accidents must be combated in the home, in the school, in public places, in travel and in places of work. Administrative, statistical, medical, engineering and educational activities must be covered in any well rounded safety program.

Although much already has been accomplished in safety work, with a marked reduction in the incidence and severity of accidents, much still remains to be done particularly with reference to accidents in the home and in public places and travel. Most of the results during the last two decades in the prevention and control of accidents have been brought about in industries through the development of well organized industrial safety programs. Recent studies made by some of our operating telephone companies in the Bell System indicate that there are three or four times as many accidents to employees while off the job as there are while they are at work, and five or six times as many days lost on account of accidents occurring while away from work as there are while on the job. This emphasizes the need for a far reaching and forward looking program which will concentrate more and more efforts on public and home safety without a let up in well established industrial safety activities. There is little wisdom in devoting time and money to an industrial safety service within an office or plant and forgetting the fact that most of the accidents to industrial employees now occur while they are away from their regular occupation. While it is realized that management has no supervision over employees while off duty, the industrial safety program so far as its educational aspects are concerned must "carry over" into the homes and leisure time of employees and must become closely integrated with all accident prevention activities of the community.

Read before the Section on Preventive and Industrial Medicine and Public Health at the Eighty-Seventh Annual Session of the American Medical Association, Kansas City, Mo., May 15, 1936.

MEDICAL EXAMINATIONS

The physician's duties and responsibilities in an industrial safety program, while having to do somewhat with various administrative, statistical, inspectional and educational activities, necessarily must be related more specifically to preemployment and periodic physical examinations and to emergency medical and surgical examinations and treatment. While early diagnosis through medical examinations is one of the chief factors in the prevention and control of sickness among workers in industry, the inherent value of the preemployment physical examination so far as the prevention of accidents is concerned is in its potential power to make possible the proper placement of workers from the standpoint of accident hazards and prevent prolonged disability and loss of time from work. Good physical condition, as a rule, means more rapid recovery from accidental injuries; poor physical make up is conducive to slow convalescence. Of even more value than the preemployment physical examination, in the prevention and control of occupational diseases and accidents, is the periodic check up. For this reason all employees exposed to special occupational hazards of sickness or injury should have a periodic medical examination. Just as the newer public health and industrial health focus attention on personal hygiene as of equal value with environmental sanitation, so also a newer public safety and industrial safety must emphasize the make up of the individual worker as contrasted with his environment and mechanical equipment. Accident prevention is becoming recognized as being dependent more and more on medical and psychologic examinations and the proper follow up and placement of employees.

Each industrial organization must decide for itself as to the future development of new phases of preemployment and periodic medical examinations, including routine roentgenographing of the chest and such tests as pertain to the nervous and mental qualities of the prospective employee. Mental hygiene in industry is only on the threshold of development. As interest grows in this important subject, which underlies the whole realm of safety and physical health, more and more industries will be thinking in terms of mental and nervous system examinations in connection with their routine physical appraisals. Although the majority of industries do not include blood and other tests for venereal diseases in their routine preemployment or periodic physical examinations, more and more companies are beginning to recognize the hidden costs in money and disability from accidents and sickness to which these diseases give rise. The prevention and control of syphilis and gonorrhea constitute a health and safety measure which should be of vital concern to the whole community.

FIRST AID

First aid is the most important adjunct of accident prevention and control; its study and practice promote safety mindedness or safety consciousness. Physicians must assume the leadership in the teaching of first aid, which has been defined as a "special branch of practical medicine and surgery, by a knowledge of which trained persons are enabled to afford skilled assistance in cases of accident and sudden illness, and through which prolonged or permanent disability may be prevented and life often saved."

Without elaborating on its details, which are more or less self evident, the following may be listed as an outline of the fundamental elements of an adequate first aid service:

A. First aid treatment:

1. Immediate reporting of injuries for diagnosis and treatment, together with complete records.
2. Conveniently located first aid treatment facilities.
3. First aid work carried on under trained and experienced personnel.
4. Adequate follow up of each case.

B. First aid instruction:

1. Instruction on principles and practice of emergency first aid, including particularly artificial respiration and the control of bleeding.
2. Printed publicity, group talks, moving and talking pictures and bulletins on subject of first aid.
3. First aid training classes, teams and contests, when practicable and feasible.
4. First aid committees and special campaigns and rallies to stimulate group interest.

The five general principles to be applied as they may be necessary in the practice or teaching of first aid work are:

1. Obtaining a doctor's services.
2. Stopping bleeding.
3. Restoring breathing.
4. Making the patient as comfortable as practicable.
5. Doing no more than is actually needed.

ACCIDENT PRONENESS

From various recent studies it is now well established that certain persons have a special liability to be the subjects of accidents just as some individuals are particularly susceptible to diseases. Not only may a small percentage of a working group show a very high percentage of the total sickness disability in the entire group, but it has been found that as little as 10 per cent of a group may be responsible for as much as 75 per cent of the accidents occurring among them. Recent medical research has shown that "accident proneness" may be an innate characteristic of some individuals and a personal phenomenon independent of any question of responsibility, conscious action or blameworthiness. It has been found that those who sustain an undue number of one kind of accident also sustain an undue number of other kinds and that accident proneness is a relatively stable quality obeying definite laws, so that if those persons who have an excessive number of accidents in their first year of employment and exposure were eliminated, the subsequent accident ratio of the group would be considerably diminished. Some have gone so far as to suggest the possible desirability of actually eliminating those who show an undue number of accidents in an initial period of employment in order to reduce the subsequent accident rate of the group and as an important method of accident prevention. While it appears reasonable that a person should be removed from a position in which he is a potential danger to himself and others, industries realizing their obligations to society in general undoubtedly will be slow to penalize an individual because, through no fault of his own, his mental and physical qualities are not equivalent to those of his fellow employees. In this connection the chief objective should be to see that these accident-prone individuals, who may make up as much as one fourth of a working group, are identified through medical and other examinations and are assigned to work in which the severity and danger of their potential accidents are reduced to a minimum. Moreover, the accident prone generally are the least healthy, indicating that the prevention of accidents may depend to a considerable degree on the prevention of sickness and emphasizing further the need for greater attention to the entire health program. Individual accident susceptibility may be based on such factors as (1) the effectiveness of the visual apparatus, (2) reaction times, (3) reduced energy, (4) the intensive and extensive distribution of attention, and (5) certain kinesthetic impressions or sensations and nervous reflexes making possible more or less automatic performance. Newer developments in regard to the relation of some of these factors to the incidence of accidents should be mentioned briefly in passing.

VISION

Aside from various pathologic conditions there are two factors which in the past have served to determine whether or not the eyes of an individual are functioning properly; these are refraction and muscle balance. Recent studies by Ames [1] and his co-workers indicate that there is a third newly discovered factor of importance; that is, the relative size and shape of the ocular images of the two eyes, a difference in which constitutes a condition known as aniseikonia. In such a condition, depth perception or stereoscopic vision is seriously disturbed and it is conceivable that such impaired vision may be a very important element in the causation of accidents. To insure perfect single binocular vision it is imperative to detect, measure and correct aniseikonia, and this may come to be one of the newer requirements in the control of accidents from the standpoint of vision.

REDUCED ENERGY

Accident proneness, or individual accident susceptibility, at times has been explained on the basis of physical, mental or nervous fatigue, such fatigue usually being interpreted as reduced or impaired energy due to some particular type of work, labor or exertion. Recent studies by Haggard and Greenberg [2] seem to indicate that drops in efficiency and productivity may not necessarily be related to actual fatigue and weariness relieved by rest, but that many cases of so-called fatigue are nothing more than reduced energy due to the need for and relieved by food.

A recent study of personal injury accidents made by one of our companies shows that the great majority of accidents of this nature occur between 10 and 12 o'clock in the forenoon and 3 and 5 o'clock in the afternoon. As the work involved and the rest periods available preclude the possibility of so-called industrial fatigue, it is conceivable that these accidents were related to reduced energy, which may have taken place with the approach of meal time and the need for food. While preliminary experimental studies point to the possible value of extra feedings in the midforenoon and midafternoon, to prevent loss in efficiency, effort or production and possibly to reduce accident susceptibility,

1. Ames, Adelbert, Jr.: Aniseikonia: A Factor in the Functioning of Vision, Am. J. Ophth. **18**: 1014 (Nov.) 1935.
2. Haggard, H. W., and Greenberg, L. A.: Diet and Physical Efficiency, New Haven, Yale University Press, 1935.

V 107
1936

it would seem wise before attempting the expense and trouble of providing extra feedings as a routine to be sure that the industrial worker, the school child and the housewife have the necessary knowledge as to their average food needs for a day and that they become thoroughly acquainted with the fact that breakfast should be something more than a cup of coffee and that a sandwich is not a complete lunch; all of which, in the interest of safety as well as of health, argues for more instruction on diet and nutrition not only for household members but for school children and industrial workers. What first may be necessary is not more but better balanced meals, and this is largely a matter of education. Before advocating an increase in the number of meals per day, as some have done, it would be wise to make certain that the three regular meals are what they should be in quality and quantity.

NERVOUS REFLEXES

"The car went out of control" has been the explanation of many automobile accidents in the past. According to the recent suggestion of Henderson [3] it often in reality is the motorist "who goes out of control," thus emphasizing further the fact that the newer public safety must concentrate more and more on the human element, including individual nervous reflexes and reactions. The so-called self-righting reflex caused by a sudden upset of equilibrium in an emergency and the more or less unconscious "extensor thrust" of the legs and feet are instinctive reactions which may result in a sudden pressure on the accelerator pedal of an automobile, thus causing a serious accident although the car itself and its motor, brakes and steering gear are in perfectly good order. All of which is a further indication that machines and equipment should be fashioned for the human individual and his safety, based on a complete knowledge of his physical requirements and nervous reflexes, which can be determined only by suitable medical examinations. Compulsory periodic testing of automobiles already is in effect in some states; required periodic medical examinations of all licensed vehicle operators should be the next step in highway safety.

HOME AND SCHOOL SAFETY

It is becoming more and more apparent that safety in the home should be the central objective and influence from which radiates safety in all other walks of life. To this end, instruction in safety practice is of paramount importance in the home. In this great work, no individuals are in a more strategic position to accomplish results through practical teaching than are the physician and the nurse.

Safety in industry, in the school, in public places and in travel has been built largely on the combined foundations of enforced regulations and education. In the home, on the other hand, most of our results in reducing accidents must be accomplished through education alone. Home accidents, as a rule, are due to ignorance, indifference or inadequate equipment. Both the human element and the home environment are the factors to be considered. To a large degree, the problem is one of education of individuals, preferably in family and home groups. Ignorance and indifference must be dispelled and proper methods of using home facilities and equipment must be taught.

Health and welfare problems more and more are being solved with the family and home as the unit to be considered. So also the problems of safety must be approached through the home, not only for the benefit of the home itself, but also in the interest of furthering all phases of human safety. The family doctor in carrying on his functions as a teacher of health and a healer of disease should grasp every opportunity to teach the facts with reference to accident causation and prevention to the children and adults with whom he comes in contact. Moreover, medical examinations of individuals in family and school groups should be of as much value as examinations of industrial workers in bringing to light the accident prone and in serving as a background for safety education. Such medical examinations in industry, in the school and in the home will contribute also to the control and prevention of accidents in public places and in travel.

TRAINING OF PHYSICIANS

Finally, it may be stated that better facilities should be developed in our medical schools for teaching the medical aspects of accident prevention and of safety; and adequate graduate instruction should be made more generally available for those planning to specialize in these fields. Prospective doctors, many of whom eventually will be called on to render service particularly in the field of industrial accidents and safety, should be taught the principles of court procedure and testimony, the many aspects of liability and compensation, and the fundamentals of personnel administration and industrial relations. The medical curriculum is in need of various modern amendments to permit it to keep pace with the growing demands made on the intelligence and ability of the present-day physician. In no field are these demands greater than in that of preventive and industrial medicine, public health and safety.

195 Broadway.

3. Henderson, Yandell: How Cars Go Out of Control: Analysis of the Driver's Reflexes, Science **82**: 603 (Dec. 27) 1935.

ABSTRACT OF DISCUSSION

DR. JOHN H. OGILVIE, Kansas City, Mo.: I was interested to see that Dr. Bristol's problems in the prevention of accidents have been very similar to mine in a work that is entirely dissimilar to his; that is, the same factors are present in Dr. Bristol's work and in mine. I should like to show some results of this individual whom he calls the accident-prone individual. He is a very potent source of expense in industry. Years ago I began a study to see what I could do to reduce my medical costs. Some interesting things were found: First, the medical cost and the proportion of serious accidents were in direct proportion to the number of minor accidents; second, that 16 per cent of individuals were contributing about 66 per cent of the accidents; so I began a study of this small group of individuals. After suggestions from medical men and safety engineers, and all the safety devices we could devise, I found that the proportion of accidents was still too high. I began a further study to determine the cause of these accidents and came to the conclusion to which Dr. Bristol has come, that there is an individual who is accident prone. I find that this individual falls into three classes: (1) the individual who is hindered by some major or minor physical defect, (2) the individual who is in a job that is not suitable to him, and (3) the individual who is accident prone simply because he cannot be educated. He is the person who is involved in a great many of the major accidents. He is analogous to the man who walks across the street through a stream of traffic reading his newspaper. In the first group I found that by repeated examinations during the course of employment, that individual could be eliminated; that is, by sending him to his local doctor and making suggestions to him, I could correct him. In the second group by being fitted into a job which was suitable for him, the individual could be corrected. In the third group, individuals who could not be educated in spite of an educational campaign and safety hazards education, the only thing that had any effect was disciplinary measures. Only 30 per cent of the accidents to

which I have been referring that occurred ten years ago are now happening. I am glad that Dr. Bristol has drawn attention to these things that are associated with this accident prone individual.

DR. LOUIS J. HIRSCHMAN, Detroit: I offer an apology for speaking at this meeting because I practice clinical medicine; however, I am a member of the Michigan State Council of Health and I am interested in public health as well as in the individual. I also come from a city where the most dangerous weapon on which man has his hands—the automobile—is manufactured. It is said that automobile accidents are responsible for more lives lost than any other one class of hazards. Much is heard about the drastic action of courts on careless drivers; but it seems to me that a leaf should be taken from the book of the Department of Commerce in connection with the rigid examinations of airplanes as well as of pilots. There should be, in a lesser degree, some definite method of periodic examination of automobiles with regard to brake control, as well as an examination of the weakest part of the automobile; that is, "the nut at the wheel." There should be some way of examining him before he receives his driver's license, an examination by his family physician, the same as in the case of the locomotive engineer, the bus driver and the taxi driver. If definite action could be taken by which municipalities would insist on more than a cursory examination of drivers, and the physically and mentally unfit eliminated, a great deal would be done toward improving the medical aspect of accident control.

DR. STANLEY H. OSBORN, Hartford, Conn.: I think that the last speaker has landed in the middle of an interesting problem. I should like to make a motion that the incoming chairman of the section appoint a committee on accident control and safety to study the medical aspects of accident control and make recommendations to the next annual meeting.

EXPERIMENTAL PRODUCTION OF MALIGNANT GROWTHS IN MICE BY ESTROGENIC CHEMICALS

WILLIAM U. GARDNER, PH.D.
GEORGE M. SMITH, M.D.
LEONELL C. STRONG, PH.D.
AND
EDGAR ALLEN, PH.D.
NEW HAVEN, CONN.

The rôle of chemical stimulation in the development of mammary tumors postulated clearly by Loeb[1] in 1919 has been demonstrated experimentally by several investigators.[2] The present report summarizes additional experiments on the effect of several different chemical stimulants (estrogenic hormones[3]) on the development of mammary carcinomas and of subcutaneous sarcomas in three different strains of mice.

As new features may be listed (1) the development of sarcomas at the sites of injections in nongenital tissues following treatment with estrogenic hormones[4] which have formerly been considered specific stimulants to the genital tissues; (2) the production of mammary cancers in mice by four different estrogenic chemicals (theelin, keto-estrin benzoate, hydroxyestrin benzoate and equilin benzoate); (3) the production of mammary carcinomas in an inbred strain of mice which had previously been considered relatively cancer resistant.

One or two estrogenic chemicals have been injected for periods exceeding 125 days into 126 mice of three strains as follows: eighty-six mice of the A strain, twenty-seven mice of the C_3H strain, and thirteen mice of the CBA strain, both males and females as shown in the table. Untreated breeding female mice of the A and C_3H strains normally develop a high percentage of mammary tumors, while those of the CBA strain very seldom develop such tumors.

Summary of Experiments with Concentrated Estrogens in Mice

Strain	Sex	No. of Mice Treated	No. of Mammary Tumors	No. of Sarcomas	No. Still Living Without Tumors	Percentage Dying with Tumors
A	♀	20	7	0	1	37
	♂	66	9	1	16	18
C_3H	♀	9	2	0	4	40
	♂	18	8	6	0	77
CBA	♀	8	2	0	5	100
	♂	5	0	0	3	0
Totals.....		126	28	7	29	

Up to the present time a total of twenty-eight mice receiving estrogenic hormones have developed mammary tumors and seven have developed spindle-cell sarcomas in intimate relation with retained oil cysts at the sites of injection.

STRAIN A

Sixteen mammary tumors have been observed in the eighty-six mice of strain A which have been treated for 125 days or more, seven of these occurring in nonbreeding females and nine in males. The tumor incidence in virgin females of this strain has not been determined but the injected female mice, when injections of large amounts of estrogenic hormone are started in the first week or two of life, might be considered as equivalent to ovariectomized females because the ovaries remain very small and mature follicles or corpora lutea do not form. Tumors have developed in both male and female mice of this strain receiving keto-estrin benzoate, hydroxyestrin benzoate and equilin benzoate. Mice receiving theelol, theelin or equilin have not developed mammary tumors up to this time. All but one of the mice developing mammary tumors received 500 international units of estrogenic chemical or 0.1 mg. of equilin benzoate weekly, the injections starting at from 1 to 119 days of age and continuing for periods up to one year. The estrogenic activity of the amounts of theelin, theelol and equilin injected have been smaller than those of the other estrogenic chemicals.

A spindle-cell sarcoma developed in association with a retained oil cyst at the site of injections in a male mouse receiving keto-estrin benzoate (British Drug House).

STRAIN C_3H

Nine female and eighteen male mice of the C_3H strain have received either keto-estrin benzoate, hydroxyestrin benzoate, theelin or theelin in combination with keto-estrin benzoate. One male receiving theelin and seven males receiving weekly injections of 500 international units of keto-estrin benzoate developed mammary tumors. No tumors developed in three females receiving similar treatment. Two of six

From the Department of Anatomy, Yale University School of Medicine.
Acknowledgment is made to the International Cancer Research Foundation, the Fuller Fund and the Committee for Research in Problems of Sex of the National Research Council for support of various phases of the work summarized here.

1. Loeb, Leo: J. Exper. Med. **40**: 477 (Sept.) 1919.
2. Lacassagne, A.: Compt. rend. Acad. d. sc. **195**: 630 (Oct. 10) 1932. Burrows, Harold: Am. J. Cancer **24**: 613 (July) 1935. Bonser, G. M.: J. Path. & Bact. **41**: 217 (July) 1935. Gardner, W. U.; Smith, G. M.; Allen, Edgar and Strong, L. C.: Cancer of Mammary Gland Produced in Male Mice Receiving Estrogenic Hormone, Arch. Path. **21**: 265 (March) 1936. Cramer, William, and Horning, E. S.: Lancet **230**: 247 (Feb. 1) 1936.
3. The theelin and theelol used in these investigations was supplied by Parke, Davis & Co. through the courtesy of Dr. O. Kamm. Dr. Girard of Paris supplied the crystalline equilin and equilin benzoate. The keto-estrin benzoate and hydroxyestrin benzoate were obtained from the British Drug House and the Laboratoire français de chemothérapie.
4. Gardner, W. U.; Smith, G. M.; Strong, L. C., and Allen, Edgar: Development of Sarcoma in Male Mice Receiving Estrogenic Hormones, Arch. Path. **21**: 504 (April) 1936.

virgin females receiving 100 international units of hydroxyestrin benzoate weekly developed mammary tumors.

Spindle-cell sarcomas developed in the five male mice which received theelin in aqueous solution followed by keto-estrin benzoate in oil, and a sarcoma developed in one of the eleven mice receiving only keto-estrin benzoate in oil.

STRAIN CBA

Keto-estrin benzoate and hydroxyestrin benzoate have been given at the rate of 500 international units weekly to eight female and five male mice of strain CBA. Two of the female mice have developed mammary cancers. Eight of the thirteen mice are still living without tumors, though four of these have been treated for over one year.

SUMMARY

A total of 126 mice of three inbred strains have received estrogenic hormones for periods of 125 days or more. Twenty-eight mice have developed one or more mammary carcinomas and seven more have developed spindle-cell sarcomas as local reactions in relation to retained oil cysts at the sites of injection. Mammary cancers have developed in male mice receiving theelin, equilin benzoate, keto-estrin and hydroxyestrin benzoate. Mammary tumors have occurred in two of three females of the relatively tumor-resistant CBA strain.

Clinical Notes, Suggestions and New Instruments

FURTHER REPORT ON CASE OF REMOVAL OF RIGHT CEREBRAL HEMISPHERE

JOHN D. O'BRIEN, M.D., CANTON, OHIO
Attending Neuropsychiatrist, Mercy Hospital

In September 1932 I [1] presented the report of a case in which the right cerebral hemisphere was removed. Subsequently Dr. W. James Gardner [2] of Cleveland, who performed the operation, presented a further report. A married woman, aged 31, mother of two children, had generalized convulsions for ten years, occurring from two to four times a year. Later they assumed a jacksonian type and involved the left side of the body. The attacks were preceded by a sensory aura of intense burning in the palm of the left hand. For two months prior to observation, blurring of vision, beginning left paresis, headache, vomiting and a marked disturbance in the emotional sphere were noticed. The examination revealed clonic convulsions affecting the left side of the face and neck and occasionally the left arm. Bilateral papilledema was present, with a complete left homonymous hemianopia. Left hemiparesis affected the face, arm and leg. For the sensory component, tactile perception was greatly impaired over the entire left side of the body. Pain, thermal, position and vibratory perception appeared to be entirely lost. The spinal fluid pressure was 300 mm. of water. The clinical diagnosis was tumor of the right temporoparietal region.

Aug. 31, 1931, Dr. Gardner performed excision of the right hemisphere. The patient's convalescence was indeed gratifying. She was able to return to her home and family, later to assume the duties of her household, gaining strength and considerable weight, and remaining entirely free from convulsions. The deformity existing prior to the operation, left hemiparesis, slight facial asymmetry and sensory disturbance, remained with her to the end. In the mental sphere she appeared stabilized, and there was no evidence of emotional instability. She did appear to the casual observer to be slightly apathetic at times, but to her intimate friends I am unable to learn of any evidence of mental deterioration or marked personality change.

Two questions frequently asked were whether there was any change in her appreciation of distances and whether she had the same sense of the passage of time. I was unable to detect any abnormality at any time in this direction. Her memory for recent and past events was good, and she read constantly in spite of her eye difficulty. The sense of smell on the right side was lost, because the right olfactory bulb was destroyed. The sense of hearing in the right ear with the audiometer was undisturbed.

She took the usual interest in her children and attended very well to her household duties. She inquired and was anxious to know all the details of her operation, which was explained to her, and she was extremely grateful for what had been done for her.

Nov. 20, 1935, while about her home, she tripped and fell a distance of about 20 feet. She was able to get up and go about for a few days, when she collapsed. Following this she became very apathetic, presenting marked delay in all mental reactions; it was necessary to feed her, and memory for both past and recent events was very much disturbed. Involuntaries appeared and the spatial sense was quite disturbed, in addition to a marked disturbance of vision.

Lumbar puncture revealed bloody fluid, and it was felt that she had a subdural hematoma on the left side. Dr. Purdy trephined over the left parietal eminence, under local anesthesia, and considerable clotted blood was removed. A lumbar puncture needle was inserted in the old trephine opening in the right cranial cavity, and the removal of about 50 cc. of bloody spinal fluid caused the brain to collapse and later appear in the field of operation. Simultaneously she complained of headache and at this moment appeared talkative and very responsive to all stimuli. She appeared to be in good condition for several days, when she lapsed into her former apathetic state. Repeated puncture through the original trephine opening in the right cranial cavity and the withdrawal of about 20 cc. of blood-tinged spinal fluid caused her to appear brighter and more interested for brief intervals, until this finally failed to affect a change in her condition.

Bedridden, decidedly apathetic, with involuntaries, aroused only with great difficulty, giving the appearance of one decerebrated, she died March 4, 1936.

Strenuous efforts to obtain an autopsy were met with absolute refusal on the part of the family. This I regret very much to report, as we were interested to learn the exact pathologic condition present. Several questions remain unanswered: Did the fall and subsequent hemorrhage cause her death? or did the fall bring about a recurrence of the growth and its subsequent extension and rapid growth play a part in her death? An autopsy would have answered both questions.

Excision of the right hemisphere is not a very common procedure; it is an operation of great magnitude. From what I can gather in medical history this patient survived longer than any who have undergone a similar operation; in addition it provided this woman with almost five years of happiness with her family. Her death, having all the characteristics of an accident, leads one to wonder how long she might have lived if the accident had not occurred.

A most striking feature in this case, the operation of unusual magnitude attended with a minimum amount of disability, would lead to the consideration of the importance of the basal ganglions and the care exercised to avoid injuring them—a triumph for surgery.

Medical Arts Building.

1. O'Brien, J. D.: Removal of the Right Cerebral Hemisphere, Ohio State M. J. **28**: 645 (Sept.) 1932.
2. Gardner, W. J.: Removal of the Right Cerebral Hemisphere for Infiltrating Glioma, J. A. M. A. **101**: 823 (Sept. 9) 1933.

Temperature in the Stratosphere.—The temperature of the atmosphere dropped gradually during ascent from 0 F. at 16,700 feet to —71 F. at 37,600 feet, where the balloon entered the stratosphere. As the balloon continued to ascend, the temperature curve fluctuated sharply over a small range and the lowest temperature, —81 F., was recorded when the balloon was at 68,000 feet and descending. At 37,600 feet during descent, as the balloon left the stratosphere, the temperature began to rise steadily and rose from —70 F. to about +30 F. at 2,000 feet altitude.—Armstrong, H. G.: The Medical Aspects of the National Geographic Society-U. S. Army Air Corps Stratosphere Expedition of Nov. 11, 1935, *J. Aviation Med.* **7**:55 (June) 1936.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

PAUL NICHOLAS LEECH, Secretary.

TRICHOPHYTIN AND OIDIOMYCIN

Preliminary Report of the Council on Pharmacy and Chemistry

In 1932 the Council issued a preliminary report on Trichophyton Extract (Trichophytin-Metz), stated to be a mixture of various species of trichophyton, postponing consideration of that product to await development of further clinical evidence for the value of trichophyton therapy from the work of American dermatologists (THE JOURNAL, Nov. 10, 1932, p. 1779).

Last year the Lederle Laboratories, Inc., requested Council consideration of its Trichophytin and Oidiomycin.

Trichophytin is defined as "The soluble broth culture products of Trichophyton interdigitale" and is prepared for use as a desensitizing agent in chronic ringworm infection due to Trichophyton interdigitale.

Oidiomycin is defined as "The soluble broth culture products of Monilia albicans" and is prepared for use as a desensitizing agent in chronic ringworm due to Monilia albicans.

The firm submitted trade packages of the preparations both for diagnosis and for treatment. The Council found the trade packages unobjectionable, but some criticisms of an advertising circular were transmitted to the firm. These were submitted by the firm to Dr. M. B. Sulzberger and on the basis of his reply the differences of the firm and the Council in this matter were ironed out.

In support of the claim for recognition of Trichophytin and Oidiomycin, Lederle Laboratories, Inc., furnished references and several reports. Of course, much work on intradermal tests and intradermal therapy, using extracts of various fungi, has been carried on for some years, notably by Jadassohn, Bloch and their pupils in the Breslau and Zurich dermatologic clinics. In this country Sulzberger and Wise, Williams, Peck, Hopkins and others have also made many contributions. This entire subject is well summarized by Kerr, Pascher and Sulzberger (*J. Allergy* **5**:288 [March] 1934), who state that work has been done to show that patients hypersensitive to trichophyton extracts may be desensitized by repeated intradermal tests—a certain number of whom are remarkably benefited. A certain number that seem to be refractory to trichophyton desensitization will be found to be suffering from a monilia infection. These fungi are found on all skins, on the hair and nails and in the mouth and gastro-intestinal tract; they may cause eczematous eruptions and will show positive patch tests (Ravaut, Sulzberger, Wise, White, Becker, Shelmire). The authors, therefore, recommend the use not only of trichophyton extracts (Trichophytin) in dermatomycoses but in many instances also the use of monilia extracts.

These investigators employed for preparations of oidiomycin a pathogenic strain of Monilia albicans from a severe moniliasis of the skin, and for the trichophytin a strain of Epidermophyton interdigitale from a severe eczematous mycosis of the feet. They found it normal for a patient to have a slight to moderate reaction to 0.1 cc. of oidiomycin in a dilution of from 1:500 to 1:100. The Council believes this makes it difficult to justify the use of such a test by the practitioner not versed in the work. The authors believe a trichophytin hypersensitivity and an oidiomycin hypersensitivity are to be separate and distinct. *In both cases it must be recognized that while a positive test is specific and indicates that the patient at some time or other in the past has had an infection, yet the test is not necessarily diagnostic of the present condition.* The authors used this material for treatment of puzzling eczematous ringworm, principally of the hands and feet. Diagnoses were made clinically and by intradermal tests. In the twelve cases reported, in some instances the eruptions "flared up" as a result of the injections, indicating the specificity. Asthmatic symptoms even were noted following injection in one case. It was shown that desensitization was possible in some of the cases and the authors recommend combined trichophytin and oidiomycin desensitization in persistent cases of eczematous hand and foot eruptions due to fungi.

The Council's referee reported on an unpublished manuscript submitted by the firm, "Trichophytin and Monilia Extracts in Allergic Eczemas," by Edna S. Pennington, M.D., Department of Medicine, Vanderbilt University Medical School. The patients reported on in this article were questioned and tested for personal and family allergy and examined for evidence of ringworm infection (whether there was cultural and microscopic investigation is not stated), and the skin was tested with the two extracts. With the oidiomycin in a dilution of 1:100 were used Trichophytin-Lederle 1:30 and Trichophytin-Metz 1:50, in doses of 0.1 and 0.5 cc. Reactions locally were either immediate wheal reaction or delayed, reaching their height in from twenty-four to forty-eight hours. Trichophytin-Lederle and Trichophytin-Metz gave parallel results. Thirty-three cases are reported. In the first group of twelve no treatment except injection of trichophytin and oidiomycin was used and of these subjects nine are reported as completely cured, one definitely improved and two unimproved. In some of these cases skin lesions had been present for twelve years or longer. The second group, in which other measures were used, are, of course, for the purpose of this consideration, valueless.

Robinson and Grauer (*Arch. Dermat. & Syph.* **32**:787 [Nov.] 1935) also report on the use of autogenous and stock fungus extracts in the treatment of mycotic infections. They make the following statement (p. 789):

> "While it is not the rule, it is possible for persons not infected either with Trichophyton or with Monilia to give a positive cutaneous reaction to the extracts of these fungi. Hence, a certain degree of error results when such persons are considered to be infected with fungi in the absence of proof obtained by culture. Conversely, it does not follow that in all cases fungous infection produces a state of demonstrable sensitization. It was fairly common in our series for a mycotic infection to be present without a positive cutaneous reaction to the autogenous extract."

Dr. Sulzberger, the consultant of Lederle Laboratories, Inc., states that this quotation should read:

> "While it is not the rule, it is possible for persons at the time presenting a manifest infection either with Trichophyton or with Monilia to give a positive cutaneous reaction to the extracts of these fungi. The finding of fungi in culture in a focus is no proof that the distant dermatosis is actually attributable to the fungi found in the focus. Hence, a certain degree of error results when such persons are considered to be infected with fungi in the absence of proof obtained by culture."

The Council makes no objection to the revised version of the statement; it points out that the first quoted statement is taken verbatim from the Robinson and Grauer article.

Robinson and Grauer report a series of cases treated with autogenous extracts, many of them of long duration, and a fair proportion they considered cured. Also a further group, in which no culture was grown, was treated with stock material and sixteen out of twenty-three are reported as cured. They give warning as to the necessity of regulating the intradermal dose for the sensitization of the particular patient.

Tolmach and Traub (*Arch. Dermat. & Syph.* **28**:560 [Oct.] 1933) discuss epidermophytid and the trichophytin reaction. Sensitization is accepted as the factor in the production of secondary fungus eruptions.

Most of the concomitant eruptions on the hands in patients suffering from dermatomycosis of the feet are supposed to be epidermophytids. As the authors state, the diagnosis of epidermophytids is based on the following criteria: "(1) the findings of fungi in the lesions on the feet, (2) the absence of fungi in the lesions on the hands and (3) a positive reaction to the intradermal injection of trichophytin." In a carefully studied group of thirty-eight cases, microscopic and cultural studies being made, they found: (1) no relation between the severity of the infection and the response to injections of trichophytin; (2) only twenty-three out of the thirty-eight cases showing a positive reaction to trichophytin; (3) Monilia occurring in five cases, four of which reacted to trichophytin; (4) eight cases having demonstrable fungi in lesions of the feet gave negative

V 107
1936

responses to trichophytin; (5) patients giving negative reaction to repeated injections of trichophytin if different sites were used, *a positive reaction occurring frequently when the site of a previous injection was used. The authors doubt the specificity of trichophytin.* In discussion of the paper, Williams of New York stated that the whole question is still obscure.

Study of the literature as illustrated by the excerpts given, and consideration of the data furnished by Lederle Laboratories, Inc., force the Council to conclude that while there seems to be a certain amount of specificity in the intradermal tests and therapy with trichophytin and oidiomycin in dermatomycoses, nevertheless it has not yet reached the place where it can be unreservedly recommended to the general medical profession.

The Council therefore voted to postpone consideration of Trichophytin and Oidiomycin of the Lederle Laboratories, Inc., to await confirmatory evidence of their value.

IGOL ORAL AND IGOL G. U. NOT ACCEPTABLE FOR N. N. R.

Igol is the proprietary brand name under which Surgident, Ltd., West Hollywood, Calif., markets a series of iodine preparations. The firm presented Igol Oral and Igol G. U. for the Council's consideration. Two additional preparations mentioned in the advertisements but not in the presentation are Dental Igol 10% and Igol Surgical Dressing (a vaseline ointment).

According to the information submitted by the manufacturer, the Igol preparations are mixtures of iodine, gallotannic acid, glycerol, phenol and other ingredients to be mentioned later. The chemical synonym is said to be "Glycerodigallophenodin." That this is a name without significance is admitted by the firm in the following sentence in the firm's presentation: "by this name it is not meant to infer that the active ingredient is a chemical individual of known composition. This name was given to indicate the various constituents." The firm states, however, that "on the advice of our consulting chemists in making up future labels and literature this synonym is to be dropped as connoting unestablished definiteness of chemical structure."

The Igols are recommended as antiseptics for the treatment of a variety of bacterial infections of the skin, mucous membranes and wounds. Different preparations have been devised for application to different parts of the body.

It is claimed that the treatment of glycerol with iodine vapor produces an "impregnation of the glycerin molecule with nascent iodine to any desired concentration up to 30%." The activity of Igol is attributed to "free iodine in equilibrium with an unstable iodine compound whose composition has not yet been determined."

The firm has submitted samples of Igol Oral and Igol G. U. (Genito-Urinary) and the following documents:

I. A volume containing typewritten reports on:
   1. The Characteristics of a New Group of Antiseptic Preparations Known Commercially as Igols, by Leo T. Samuels, Ph.D.
   2. Pathologic reports on tissues treated with Igols and other disinfectants (illustrated) by Dr. Howard A. Ball.
   3. Preliminary Clinical Report on Igol, G. U., by Dr. Waldo Pendleton.

II. A folder entitled "Igol Surgical Dressing."

III. A folder entitled "Igol 10%."

IV. A circular in the form of a single sheet entitled "Dental Igol 10% and Igol Surgical Dressing."

The composition of the Igols is variable. Some of this variation is intentional, some appears to be due to uncontrolled iodinization of the glycerin. Igol Oral is said to contain approximately 10 per cent iodine; Igol G. U. approximately 6 per cent iodine; Igol 10% "iodine elemental 2%, organic iodates 8%"; Igol Surgical Dressing "elemental iodine not less than 1.5%, combined iodine 2.5%."

Dr. Samuels' analysis is said to show that the preparation contains "iodine in the form of a compound which readily releases more iodine as that in the free state is removed." This was determined by successive shaking of Igol with carbon tetrachloride. The special method used by Dr. Samuels for these determinations is not accepted by the A. M. A. Chemical Laboratory without further evidence. If the preparation were to be recommended for acceptance, this problem would be studied by the A. M. A. Chemical Laboratory. The Council's referee reported that he was not convinced by the descriptions that Igol contains an iodine compound in unstable equilibrium which gives off free iodine (at least in appreciable amounts) as the previously present free iodine is removed.

The bacteriologic tests with cultures of B. typhosus and Staphylococcus aureus indicate that the phenol coefficients of several Igol preparations are 0.78 and 0.79, while that of U. S. P. tincture of iodine was found to be 11.1.

Igol Oral sterilized infected rabbit skin in five minutes or longer in a number of trials but was considerably inferior to tincture of iodine. An "Igol alcohol-aqueous" preparation used in these tests, though it was not mentioned in the presentation, appeared to be almost as effective as a skin disinfectant as tincture of iodine. Considering that both are alcoholic solutions of iodine, this result is not astonishing.

Claims are made that the Igols are less irritant and less destructive of tissue than U. S. P. tincture of iodine. The pathologic reports support this statement. Diluted tincture of iodine might be equally nonirritant. Persons sensitive to iodine would no doubt be affected by Igol. Dr. Pendleton records a case of "first degree burn" due to the application of Igol.

Claims that the Igols promote healing of wounds and are beneficial in the treatment of Vincent's angina, infected tooth sockets, pyorrhea, genito-urinary infections and infected wounds are not substantiated by any of the material submitted by the firm.

Igol was submitted to the Council on Dental Therapeutics. The excellent report of this body was courteously made available to the Council. The Council is indebted to it for the following information:

1. U. S. Patent 1,896,171 agrees essentially with the claims for Dental Pyodin, which was previously considered by the Council on Dental Therapeutics and denied acceptance for Accepted Dental Remedies.

2. The composition of Dental Pyodin is similar to that stated for Igol.

3. From these facts the referee for the dental council concluded that Igol was produced in the effort to continue the promotion of Dental Pyodin under another name.

4. Iodotannic Syrup, N. F., is somewhat analogous in composition to Igol.

5. The referee for the Council on Dental Therapeutics who made chemical tests of Igol obtained results which made him skeptical of the claims for Igol and its supposed ability to liberate free iodine available for action on bacteria under conditions existing in living infected tissues.

The firm informed the Council that Igols were being distributed only to physicians through the usual recognized channels and that there has been no advertising or sale to the public. The advertising has been done by mailing of the circulars referred to. The Council is not clear about the firm's meaning here, as the circulars are marked "Package or Professional Distribution." In addition to their content in unestablished claims, these circulars contain references to diseases by name. They are quite unacceptable, especially as package circulars.

The name Igol is uninformative; the firm states it is coined from I for iodine, G for gallotannic acid, OL for glycerol.

The Council declared Igol Oral and Igol G. U. unacceptable for inclusion in New and Nonofficial Remedies because they are preparations of uncertain composition and of needless complexity, marketed with unwarranted therapeutic claims under an uninformative proprietary name.

The foregoing report was submitted to the firm before publication. The firm replied, objecting to the reports of the Council on Pharmacy and Chemistry and of the Council on Dental Therapeutics. Additional material was submitted by the firm in support of its objections. A review of this does not sub-

stantiate the objections to the reports, in the opinion of the Council. The firm, having apparently failed to consider the nature of the objection to the name, requested its reconsideration. The Council did not feel that reconsideration was in order and authorized publication of this report.

Council on Foods

THE COUNCIL ON FOODS HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT. FRANKLIN C. BING, Secretary.

LIBBY'S HAWAIIAN PINEAPPLE JUICE OMITTED FROM THE LIST OF ACCEPTED FOODS

The Hawaiian Pineapple Juice of Libby, McNeill & Libby, Chicago, was accepted by the Council Aug. 31, 1934, with the permissible claim that it contains from 9 to 11 Sherman units of vitamin C per ounce and that it is practically equivalent to fresh fruit juice in nutritional values (vitamin C slightly reduced). In December 1935 the following statement was received from the concern together with the request that acceptance be withdrawn:

"The company contemplates no change in its methods of manufacturing Pineapple Juice, and there is no intention on our part to deviate from the principles embodied in the rules and general decisions of the Council as we understand them."

In good faith, therefore, the Council drew up an announcement of withdrawal of acceptance based on the request of the manufacturer. Since that time, however, advertising for the product which has appeared in publications such as the *Saturday Evening Post* obliges the Council to recast its previous statement and to inform the medical profession of the status of the product in the light of the claims now advanced. In general, the product is being advertised both as a drink to yield energy and as a food to be used in the ever popular reducing diet propaganda. The following statements are illustrative:

"We need a quick energy breakfast drink in Hawaii."
"It supplies us morning energy."

Accompanied by an illustration of a slender young woman measuring her girth around the hips are these comments:

"Go down, weight!
"Ever hear of a reducing diet which didn't call for pineapple juice? . . . Libby's natural juice is a satisfying liquid—always tempting, never fattening! It helps you cut down on 'heavy food.' It's a source of vitamins A, B and C, iron and copper. All these help you 'keep going' on a reduced diet."

It is noted that the "body-building" motif has been incorporated in the copy. Thus, Libby's Pineapple Juice is recommended

"To keep the 'sniffles' away. There's nothing better than the fruit tonics in a pure, natural juice to build up your resistance . . . if you already have a cold or feel one coming on, drink 2 or 3 large glassfuls daily. . . . It furnishes extra energy, vitamins and other 'protective' factors you need to combat colds."

Accompanying the picture of an elderly gentleman are the following suggestions:

"Good bye, morning acidity! . . . And its effect on your body is to build up your alkaline reserve. . . . High in alkalinizing factors, science commends it to help you avoid acidity in a way that's really pleasant."

This advertising appears to be an artfully designed piece of deception to enmesh those uninformed in nutrition. Libby's Pineapple Juice cannot be considered a "quick energy drink" any more than many other foods. The expression "quick energy" is misinformative and therefore misleading. The claim that Libby's Juice is "never fattening" conflicts, of course, with the claim that it yields "morning energy." The reader would be led to believe that Libby's Pineapple Juice should be included in reducing diets because of its vitamins A, B and C, iron and copper. This pineapple juice is no more effective for reducing weight than are many common foods. The amount of iron in Libby's Pineapple Juice, 3.7 parts per million, is too small to warrant mention as an iron-containing food. As far as available evidence shows, the necessity of copper in human nutrition has not been established; claims that copper need be particularly considered in the selection of foods are therefore not acceptable.

The maintenance of resistance and health are dependent on adequate nutrition, exercise, rest, hygienic environment and sound habits plus other intangible prerequisites which are difficult to define. It is ludicrous to suppose that Libby's Pineapple Juice would keep one from getting colds. The usual well balanced diet includes many alkali yielding foods—milk in its various forms, fruits and vegetables. Acid-forming diets are not a practical nutritional problem, because a good modern mixed diet adequate in minerals and vitamins can scarcely be potentially acid. Stress on "alkaline reserve" claims therefore is unwarranted.

This advertising is reminiscent of the blatant "patent medicine" and nostrum blurbs of the past. The advertising treats an ordinary food as a therapeutic agent, which it is not. Perversions of advertising of this character bring good advertising into disrepute and harm the majority of the food trade that conscientiously attempts to deal fairly.

The company, when informed of the objectionable nature of these claims, replied in part:

"As for our Pineapple Juice advertising, we believe that the statements made are warranted, both as to fact and language and are necessary to express those facts to the lay public."

The company was requested to consider the foregoing report and to present any evidence which it might have in support of the claims made. In reply, the company furnished a statement by Dr. John A. Killian. The readers may be reminded that John A. Killian, Ph.D., formerly director of biochemistry, New York Post-Graduate Medical School and Hospital, and now a private chemist in New York, is the same Dr. Killian mentioned in the reports by the Bureau of Investigation of the American Medical Association on Scot Tissue (THE JOURNAL, July 16, 1932, p. 241) and Croxon Cream (Aug. 20, 1932, p. 672).

The type of argument presented by Dr. Killian is illustrated by the following quotations:

"A ketosis is indicated whenever the respiratory quotient falls to a level of 0.76. . . . Ketosis is characterized by subnormal physical efficiency, subnormal mental efficiency and an inability to get going and it may progress to the degree of resulting in stupor or even coma. . . . Frequency of respiratory quotients below 0.80 in the morning after a night's fast, indicates a state of actual ketosis or on the borderline of ketosis. . . . Through its effect upon the alkaline reserve of the blood plasma and the antiketogenic effect of these carbohydrates, the pineapple juice relieves promptly, morning ketosis . . . a glass of pineapple juice consumed the first thing in the morning, will promptly relieve, i. e., within 30 minutes, the ketosis described above."

In the opinion of the Council, the exploitation of the antiketogenic effect of pineapple juice is unjustified. There are many foods containing dextrose or other sugars which are just as capable as pineapple juice of elevating the respiratory quotient.

In the opinion of the Council these and the other comments offered by Dr. Killian do not warrant any alteration of the report. Claims that the consumption of pineapple juice builds up the resistance of the body against infections of the upper respiratory tract and that Libby's Pineapple Juice is of particular significance in the reduction of weight are no more warranted than the fantastic claim that the consumption of pineapple juice will "sweep aside morning acidity."

A further communication from the company states, in part, "We have given careful consideration however, to the Committee's ideas and it may be our future advertisements will more nearly meet the Committee's line of thinking." Such action would be highly commendable. In view of the present evidence, however, the Council voted that Libby's Pineapple Juice be removed from the list of accepted foods because the product is promoted in conflict with the Council's rules by the use of grossly exaggerated and unjustifiable claims which are believed to be seriously misleading to the public.

V 107
1936

MEDICAL EDUCATION IN THE UNITED STATES AND CANADA

DATA FOR THE ACADEMIC YEAR 1935-1936 PRESENTED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The report presented herewith for the academic year 1935-1936 contains statistical data and editorial comment regarding existing medical schools approved by the Council on Medical Education and Hospitals.[1] Included are revised lists of hospitals approved for internships and residencies in specialties. Also reproduced in the following pages are the Essentials of an Acceptable Medical School, the Essentials of an Acceptable School of Occupational Therapy (adopted by the House of Delegates in 1935), the Essentials of an Acceptable School for Physical Therapy Technicians and the Essentials of an Acceptable School for Clinical Laboratory Technicians (adopted by the House of Delegates in 1936). The Council's first inspection of schools for physical therapy and laboratory technicians based on the last two named essentials has been completed and lists of schools already found acceptable appear in the following pages. The publication of a list of acceptable schools of occupational therapy has been postponed until after Jan. 1, 1939, to allow time for certain schools to make the necessary changes.

Seventy-seven medical schools in the United States and ten in Canada, 705 hospitals approved for internships and 410 hospitals offering approved residencies in specialties are referred to in the tabulations presented.

These data are based on official reports from the institutions listed. Acknowledgment is tendered the officers of the bodies mentioned and others for their ready cooperation in supplying the facts included in this presentation as well as for other material furnished throughout the year enabling the Council to maintain its medical student and hospital registers efficiently.

SURVEY OF MEDICAL EDUCATION

Visitation of the schools has been completed and the compilation of data is in progress. Attention may again be directed to the overcrowding and understaffing of many of the schools. Speaking generally, the problem of securing clinical facilities adequate in kind and amount, under university control, so far as the appointment of clinical teachers is concerned, has not been satisfactorily solved. Correlation of the training and experience of teachers with the degree of responsibility assumed has still to be achieved. The selection of students, on a qualitative rather than a purely quantitative basis, is a problem calling for the best efforts of admission authorities.

From our observations it is evident that medical libraries need to be still further developed. Research needs greater encouragement. Salary scales, in the lower brackets, must be revised. Didactic methods of teaching in the clinical subjects prevail to an unwarranted extent. Substantial improvement along these and other lines will involve considerably greater financial support. The public should be brought to a realization of the fact that the well trained physician is a costly product and that, unless medical education receives adequate public support, inferior medical service will be the inevitable result.

PREMEDICAL EDUCATION

The minimum of collegiate credit required for entrance to medical schools in order to meet the Council's standards since 1918 has been two full academic years, including English and theoretical and practical courses in physics and biology and in general and organic chemistry, completed in institutions approved by accrediting associations acceptable to the Council. These agencies are:

Association of American Universities.
Middle States Association of Colleges and Secondary Schools.
New England Association of Colleges and Secondary Schools.
North Central Association of Colleges and Secondary Schools.
Northwest Association of Secondary and Higher Schools.
Southern Association of Colleges and Secondary Schools.

Since 1915 the Council has published a list of approved colleges of arts and sciences and junior colleges as a guide to medical schools in the selection of students and also to assist the prospective medical student in choosing a college for his premedical training.

Medical schools are privileged to accept applicants who have fulfilled the requirement in American and Canadian institutions not approved by the agencies mentioned, provided the applicant gives evidence of superior ability.

The preliminary prerequisite of the Council is outlined in detail in the Essentials of an Acceptable Medical School, which appears on page 684.

The Council's requirements and those of the Association of American Medical Colleges, in which practically all approved medical schools hold membership, do not materially differ.

The College Association also endorses the list of evaluating agencies mentioned before but in addition recognizes the colleges approved by a state university.

College grades, the medical aptitude test and personal interviews serve as a basis for selection. The House of Delegates of the American Medical Association at the Kansas City session recently transmitted to the Council the recommendation included in a resolution, which was adopted, that entrance requirements to the medical courses of the educational institutions of the United States be conditioned on the character, personality, adaptability, social fitness and motivations of the applicant as well as on his academic training.

The organizations interested in the improvement of medical education do not attempt to outline courses that should be taken in the secondary school.

For the session 1936-1937, forty-five medical schools in the United States have adopted requirements in excess of the minimum; i. e., four require a degree, thirty-six require three years, one requires four years, three schools will admit students with three years of

(Continued on page 666)

1. Including three schools which are not fully approved. See footnotes to table 1, page 663.

TABLE 1.—*Statistics of Recognized Medical Schools in the United States and Canada*

Marginal No.	Name and Location of School	1936-1937 Premedical Requirement by Years	Length of Course, Academic Years	Students by Classes Session 1935-1936 1st Year	2d Year	3d Year	4th Year	5th Year or Intern Year	Totals	Graduates Since July 1, 1935	Session 1936-1937 Begins 1936	Session 1936-1937 Ends 1937	Applications for Admission to the 1st Year Will Be Received Until	Executive Officer	Marginal No.
	ALABAMA														
1	University of Alabama School of Medicine, University (Tuscaloosa)	3	2	54	58	..	..	...	112	...	Sept. 9	May 26	.....	Stuart Graves, M.D., Dean	1
	ARKANSAS														
2	University of Arkansas School of Medicine, Little Rock	2	4	98	69	75	49	...	289	48	Sept. 30	June 7	August	Frank Vinsonhaler, M.D., Dean	2
	CALIFORNIA														
3	University of California Medical School, Berkeley-San Francisco	3	5	61	64	61	52	56‡	238	57	Aug. 24	May 22	April	W. McKim Marriott, M.D., Dean	3
4	College of Medical Evangelists, Loma Linda-Los Angeles	2	5	107	110	104	73	92‡	394	85	Sept. 1	June 13	May	E. H. Risley, M.D., Dean, Loma Linda; W. E. Macpherson, M.D., Associate Dean, Los Angeles	4
5	University of Southern California School of Medicine, Los Angeles	3	5	51	46	47	46	30‡	190	30	Sept. 21	June 5	May	Paul S. McKibben, Ph.D., Dean	5
6	Stanford University School of Medicine, San Francisco	3	5	60	60	62	52	45‡	234	45	Sept. 29#	June 9	March	Loren Roscoe Chandler, M.D., Dean	6
	COLORADO														
7	University of Colorado School of Medicine, Denver	3	4	58	45	52	50	...	205	50	Sept. 28	June 14	April	Maurice H. Rees, M.D., Dean	7
	CONNECTICUT														
8	Yale University School of Medicine, New Haven	3	4	58	54	47	47	...	206	44	Sept. 28	June 16	March	Stanhope Bayne-Jones, M.D., Dean	8
	DISTRICT OF COLUMBIA														
9	Georgetown University School of Medicine, Washington	3	4	100	112	128	134	...	474	134	Sept. 21	June 14	March	David V. McCauley, S.J., Ph.D., Dean	9
10	George Washington University School of Medicine, Washington	2	4	65	63	62	68	...	258	69	Sept. 23	June 6	.....	Earl B. McKinley, M.D., Dean	10
11	Howard University College of Medicine, Washington	2	4	39	32	34	37	...	142	35	Sept. 26	June 11	August	Numa P. G. Adams, M.D., Dean	11
	GEORGIA														
12	Emory University School of Medicine, Atlanta	2	4	62	52	56	53	...	222	53	Sept. 28	June 7	.....	Russell H. Oppenheimer, M.D., Dean	12
13	*University of Georgia School of Medicine, Augusta	3	4	41	37	32	38	...	148	37	Sept. 21	June 7	June	G. Lombard Kelly, M.D., Dean	13
	ILLINOIS														
14	Loyola University School of Medicine, Chicago	3	5	147	129	121	110	98‡	507	98	Sept. 28	June 12	Sept.	Louis D. Moorhead, M.D., Dean	14
15	Northwestern University Medical School, Chicago	3	5	125	119	164	156	149‡	564	160	Sept. 29#	June 12	April	Irving S. Cutter, M.D., Dean	15
16	University of Chicago, Rush Medical College	3	5	...	...	...	...	149‡	321†	149	Oct. 1#	June 16	April	W. H. Taliaferro, Ph.D., Dean	16
17	University of Chicago, The School of Medicine of the Division of the Biological Sciences	3	5	...	...	...	...	40‡	311†	40	Oct. 1	June 16	April	B. C. H. Harvey, M.D., Dean of Students	17
18	University of Illinois College of Medicine, Chicago	2	5	180	165	152	140	135‡	637	144	Sept. 28	June 11	Sept.	David J. Davis, M.D., Dean	18
	INDIANA														
19	Indiana University School of Medicine, Bloomington-Indianapolis	3	4	122	99	105	106	...	432	108	Sept. 15	June 14	.....	Burton D. Myers, M.D., Dean, Bloomington; Willis D. Gatch, M.D., Dean, Indianapolis	19
	IOWA														
20	State University of Iowa College of Medicine, Iowa City	2	4	120	102	79	92	...	393	94	Sept. 21	June 7	July	Ewen Murchison MacEwen, M.D., Dean	20
	KANSAS														
21	University of Kansas School of Medicine, Lawrence-Kansas City	2	4	83	70	70	72	...	295	72	Sept. 17	June 7	June	H. R. Wahl, M.D., Dean	21
	KENTUCKY														
22	University of Louisville School of Medicine, Louisville	2	4	92	73	90	87	...	342	87	Sept. 17	June 5	May	John Walker Moore, M.D., Dean	22
	LOUISIANA														
23	Louisiana State University Medical Center, New Orleans	3	5	107	88	75	45	50‡	315	49	Sept. 14	May 29	.....	Arthur Vidrine, M.D., Dean	23
24	Tulane University of Louisiana School of Medicine, New Orleans	2	4	130	112	113	115	...	470	112	Sept. 25	June 9	April	Charles C. Bass, M.D., Dean	24
	MARYLAND														
25	Johns Hopkins University School of Medicine, Baltimore	Degree	4	69	68	68	66	...	271	66	Sept. 29	June 8	June	Alan M. Chesney, M.D., Dean	25
26	University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore	2	4	95	101	118	100	...	414	97	Sept. 22	June 5	.....	J. M. H. Rowland, M.D., Dean	26
	MASSACHUSETTS														
27	Boston University School of Medicine, Boston	3	4	70	56	58	64	...	248	63	Sept. 24	June 14	.....	Alexander S. Begg, M.D., Dean	27
28	Harvard University Medical School, Boston	2	4	125	132	139	133	...	529	134	Sept. 28	June 24	March	Charles Sidney Burwell, M.D., Dean	28
29	Tufts College Medical School, Boston	Degree	4	126	113	119	116	...	474	115	Sept. 23	June 14	March	A. Warren Stearns, M.D., Dean	29
	MICHIGAN														
30	University of Michigan Medical School, Ann Arbor	3	4	138	124	100	119	...	481	116	Sept. 28	June 19	March	Albert Carl Furstenberg, M.D., Dean	30
31	Wayne University College of Medicine, Detroit	3	5	67	70	79	84	71‡	300	71	Sept. 24	June 19	June	Raymond B. Allen, M.D., Dean	31
	MINNESOTA														
32	University of Minnesota Medical School, Minneapolis	2	5	136	140	123	114	139‡	513	126	Sept. 28#	June 14	July	Harold S. Diehl, M.D., Dean	32
	MISSISSIPPI														
33	**University of Mississippi School of Medicine, University	3	2	...	19	...	...	...	19	...	Sept. 18	May 31	Sept.	B. S. Guyton, M.D., Dean	33
	MISSOURI														
34	University of Missouri School of Medicine, Columbia	3	2	43	37	...	...	...	80	...	Sept. 14	June 9	June	Dudley S. Conley, M.D., Dean	34
35	St. Louis University School of Medicine, St. Louis	2	4	146	109	125	124	...	504	116	Sept. 17	June 1	Sept.	Alphonse M. Schwitalla, S.J., Ph.D., Dean	35
36	Washington University School of Medicine, St. Louis	4	4	83	77	97	98	...	355	96	Sept. 24	June 8	Sept.	David P. Barr, M.D., Chairman of the Administrative Committee	36
	NEBRASKA														
37	Creighton University School of Medicine, Omaha	2	4	80	70	59	78	...	287	77	Sept. 22	June 3	.....	Bryan M. Riley, M.D., Dean	37
38	University of Nebraska College of Medicine, Omaha	2	4	94	78	83	73	...	328	70	Sept. 21	June 7	June	C. W. M. Poynter, M.D., Dean	38
	NEW HAMPSHIRE														
39	Dartmouth Medical School, Hanover	3	2	23	20	...	...	...	43	...	Sept. 17	June 11	.....	John P. Bowler, M.D., Dean	39

V 107
1936

	NEW YORK														
40	Albany Medical College, Albany	Degree	4	27	25	22	26	...	100	25	Sept. 28	June 14	July	Thomas Ordway, M.D., Dean	40
41	Long Island College of Medicine, Brooklyn	2½	4	97	92	90	104	...	383	104	Sept. 28	June 3	June	Wade W. Oliver, M.D., Acting Dean	41
42	University of Buffalo School of Medicine, Buffalo	2	4	75	65	64	64	...	268	62	Sept. 28	June 5	Sept.	Edward W. Koch, M.D., Dean	42
43	Cornell University Medical College, Ithaca-New York	3 & Degree	4	78	68	76	64	...	286	64	Sept. 28	June 16	Sept.	William S. Ladd, M.D., Dean	43
44	Columbia University College of Physicians and Surgeons, New York	3	4	112	99	93	88	...	392	85	Sept. 17	June 1	Dec.	Willard C. Rappleye, M.D., Dean	44
45	New York Medical College and Flower Hospital, New York	2	4	72	74	87	82	...	315	77	Sept. 14	June 8	Sept.	Claude A. Burrett, M.D., Dean	45
46	New York University College of Medicine, New York	3 & Degree	4	136	112	145	128	...	521	131	Sept. 16	June 9	March	John Wyckoff, M.D., Dean	46
47	University of Rochester School of Medicine, Rochester	3	4	47	44	36	41	...	168	42	Sept. 21	June 19	.....	George Hoyt Whipple, M.D., Dean	47
48	Syracuse University College of Medicine, Syracuse	2	4	48	40	41	45	...	174	45	Sept. 24	May 31	May	H. G. Weiskotten, M.D., Dean	48
	NORTH CAROLINA														
49	University of North Carolina School of Medicine, Chapel Hill	3	2	39	35	...	...	...	74	...	Sept. 17	June 8	Sept.	C. S. Mangum, M.D., Dean	49
50	Duke University School of Medicine, Durham	2	6	...	...	...	...	30†	219†	38	Oct. 5	June 12	.....	Wilburt C. Davison, M.D., Dean	50
51	Wake Forest College School of Medicine, Wake Forest	3	2	25	31	...	...	...	56	...	Sept. 15	June 1	July	C. C. Carpenter, M.D., Dean	51
	NORTH DAKOTA														
52	University of North Dakota School of Medicine, Grand Forks	3	2	33	26	...	...	...	59	...	Sept. 15	June 8	.....	H. E. French, M.D., Dean	52
	OHIO														
53	University of Cincinnati College of Medicine, Cincinnati	3	5	76	70	72	68	68†	286	66	Sept. 21	June 4	Feb.	Alfred Friedlander, M.D., Dean	53
54	Western Reserve University School of Medicine, Cleveland	3 & Degree	4	75	67	62	57	...	261	57	Sept. 24	June 16	Sept.	Torald Sollmann, M.D., Dean	54
55	Ohio State University College of Medicine, Columbus	3	4	103	87	99	92	...	381	92	Sept. 29	June 14	June	J. H. J. Upham, M.D., Dean	55
	OKLAHOMA														
56	University of Oklahoma School of Medicine, Oklahoma City	2	4	66	56	59	59	...	240	58	Sept. 14	June 7	July	Robert U. Patterson, M.D., Dean	56
	OREGON														
57	University of Oregon Medical School, Portland	3	4	65	58	54	57	...	234	55	Oct. 5	June 10	July	Richard B. Dillehunt, M.D., Dean	57
	PENNSYLVANIA														
58	Hahnemann Medical College and Hospital of Philadelphia	2	4	165	139	122	98	...	524	98	Sept. 28	June 10	.....	William A. Pearson, Ph.D., Dean	58
59	Jefferson Medical College of Philadelphia	Degree	4	132	129	139	133	...	533	133	Sept. 21	June 4	.....	Ross V. Patterson, M.D., Dean	59
60	Temple University School of Medicine, Philadelphia	3	4	112	108	118	127	...	465	124	Sept. 23	June 10	May	William N. Parkinson, M.D., Dean	60
61	University of Pennsylvania School of Medicine, Philadelphia	3	4	130	117	137	141	...	515	140	Sept. 28	June 9	March	William Pepper, M.D., Dean	61
62	Woman's Medical College of Pennsylvania, Philadelphia	3	4	26	30	27	33	...	116	33	Sept. 23	June 2	Sept.	Martha Tracy, M.D., Dean	62
63	University of Pittsburgh School of Medicine, Pittsburgh	2	4	55	65	71	61	...	252	60	Sept. 21	June 9	May	R. R. Huggins, M.D., Dean	63
	SOUTH CAROLINA														
64	Medical College of the State of South Carolina, Charleston	2	4	42	38	47	33	...	160	32	Sept. 24	June 3	Sept.	Robert Wilson, M.D., Dean	64
	SOUTH DAKOTA														
65	University of South Dakota School of Medicine, Vermillion	2	2	25	29	...	...	...	54	...	Sept. 16	June 7	July	J. C. Ohlmacher, M.D., Dean	65
	TENNESSEE														
66	University of Tennessee College of Medicine, Memphis	2	4	126	86	111	106	...	429	102	July 9‡	June 12	.....	O. W. Hyman, Ph.D., Dean	66
67	Meharry Medical College, Nashville	2	4	57	56	38	32	...	183	32	Oct. 1	May 20	Oct.	John J. Mullowney, M.D., President	67
68	Vanderbilt University School of Medicine, Nashville	3	4	50	50	51	52	...	203	52	Sept. 23	June 9	.....	Waller S. Leathers, M.D., Dean	68
	TEXAS														
69	Baylor University College of Medicine, Dallas	2	4	103	88	79	80	...	350	79	Oct. 1	May 31	.....	W. H. Moursund, M.D., Dean	69
70	University of Texas School of Medicine, Galveston	2	4	116	84	81	74	...	355	75	Oct. 1	May 31	June	W. S. Carter, M.D., Dean	70
	UTAH														
71	University of Utah School of Medicine, Salt Lake City	3	2	30	28	...	...	...	58	...	Sept. 24	June 5	Feb.	L. L. Daines, M.D., Dean	71
	VERMONT														
72	University of Vermont College of Medicine, Burlington	2	4	40	40	50	41	...	171	41	Sept. 17	June 14	June	James N. Jenne, M.D., Dean	72
	VIRGINIA														
73	University of Virginia Department of Medicine, Charlottesville	2	4	66	64	64	51	...	245	50	Sept. 17	June 15	.....	J. Carroll Flippin, M.D., Dean	73
74	Medical College of Virginia, Richmond	3	4	81	72	81	75	...	309	73	Sept. 11	June 1	July	Lee E. Sutton, M.D., Dean	74
	WEST VIRGINIA														
75	***West Virginia University School of Medicine, Morgantown	3	2	25	41	...	...	...	66	...	Sept. 14	June 8	Sept.	Edward J. Van Liere, M.D., Acting Dean	75
	WISCONSIN														
76	University of Wisconsin Medical School, Madison	3	4	109	96	49	53	...	307	51	Sept. 23	June 21	March	William S. Middleton, M.D., Dean	76
77	Marquette University School of Medicine, Milwaukee	2	5	96	76	70	64	61‡	306	60	Sept. 28	June 16	.....	Eben J. Carey, M.D., Dean	77
	CANADA														
78	University of Alberta Faculty of Medicine, Edmonton, Alta	..	6	27	44	36	33	33§	194	21	Sept. 21	April 30	Sept.	Allan C. Rankin, M.D., Dean	78
79	University of Manitoba Faculty of Medicine, Winnipeg, Man	2	5	54	50	51	46	54‡	201	56	Sept. 21	May 8	April	A. T. Mathers, M.D., Dean	79
80	Dalhousie University Faculty of Medicine, Halifax, N. S.	2	5	49	46	33	29	29‡	157	26	Sept. 8	May 11	.....	H. G. Grant, M.D., Dean	80
81	Queen's University Faculty of Medicine, Kingston, Ont	..	6	60	59	51	55	46§	318	41	Sept. 24	May 26	August	Frederick Etherington, M.D., Dean	81
82	University of Western Ontario Medical School, London, Ont	..	6	58	56	32	38	46§	218	28	Sept. 21	May 15	Sept.	F. J. H. Campbell, M.D., Dean	82
83	University of Toronto Faculty of Medicine, Toronto, Ont	..	6	162	157	154	126	125§	833	126	Sept. 29	May 15	Sept.	W. E. Gallie, M.D., Dean	83
84	McGill University Faculty of Medicine, Montreal, Que	3	5	88	87	90	112	92	469	95	Sept. 2	June 1	March	A. Grant Fleming, M.D., Dean	84
85	University of Montreal Faculty of Medicine, Montreal, Que	1	5	51	37	39	56	41‡	183	42	Sept. 15	June 15	August	Télesphore Parizeau, M.D., Dean	85
86	Laval University Faculty of Medicine, Quebec, Que	Degree	5	85	62	39	39	40	265	38	Sept. 15	May 31	Sept.	P. C. Dagneau, M.D., Dean	86
87	University of Saskatchewan School of Medical Sciences, Saskatoon, Sask.	2	2	27	24	...	...	...	51	...	Sept. 25	May 14	August	W. S. Lindsay, M.B., Dean	87

* On probation from May 10, 1936.

** Approval withdrawn Feb. 12, 1933, without prejudice to the students then enrolled. In September 1933 recognition was accorded to the first year class of 1933-1934. In December 1935 recognition was accorded the sophomore students enrolled during 1935-1936 and in February 1936 protection was granted for the session 1936-1937.

*** Approval withdrawn Feb. 17, 1935, without prejudice to the students then enrolled. In February 1936 protection was extended to students enrolled during the session 1935-1936 and those who may be enrolled in the first year class in 1936-1937.

† Enrolment not on above table by classes for the two medical schools of the University of Chicago and Duke University.

‡ Fifth year (internship) enrolment not included in the total column.

§ Sixth year enrolment: Alberta, 21; Queen's, 47; Western Ontario, 28; Toronto, 131.

Students admitted at different times of the year: Stanford, second year January 4; Northwestern, beginning of any quarter; Rush, March 29; Minnesota, January 5; Tennessee, September 28, 1936, January 4 and March 25, 1937.

TABLE 2.—*Birthplace*

Marginal Number	Name of School	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. of Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Marginal Number
1	**University of Alabama School of Medicine**	49	1	..	2	2	1	2	..	4	..	..	1	..	..	2	1	..	..	3	..	1	1
2	**University of Arkansas School of Medicine**	1	..	195	5	..	..	..	..	1	..	..	2	4	3	2	..	2	..	..	1	1	2
3	**University of California Medical School**	1	3	1	126	5	1	..	..	..	1	1	6	1	2	1	..	..	..	1	3	2	3
4	**College of Medical Evangelists**	1	1	3	63	12	2	..	3	2	3	6	5	8	7	6	..	..	3	11	6	20	4
5	**Univ. of Southern California School of Medicine**	..	2	1	66	5	3	..	..	..	..	2	8	8	8	5	..	1	..	..	4	6	5
6	**Stanford University School of Medicine**	..	3	1	105	4	1	..	1	..	1	1	6	3	5	3	..	1	..	5	1	..	6
7	**University of Colorado School of Medicine**	..	..	..	4	161	..	..	..	..	..	2	1	2	..	..	..	..	..	..	3	1	7
8	**Yale University School of Medicine**	1	..	1	2	1	41	..	..	2	..	..	5	1	1	..	1	1	4	3	23	1	8
9	**Georgetown University School of Medicine**	1	..	..	8	1	18	3	34	..	..	1	..	..	..	1	..	1	..	7	5	30	9	9
10	**George Washington Univ. School of Medicine**	1	1	..	3	1	2	..	68	1	2	5	5	4	2	1	..	2	2	6	6	2	10
11	**Howard University School of Medicine**	1	..	1	..	..	..	..	10	2	3	..	..	1	..	..	2	2	1	5	2	..	11
12	**Emory University School of Medicine**	13	..	2	..	..	1	..	..	18	132	..	..	..	..	..	1	1	..	..	..	..	12
13	**University of Georgia School of Medicine**	1	..	..	..	..	..	..	..	..	121	..	..	1	..	..	..	..	..	1	2	..	13
14	**Loyola University School of Medicine**	..	2	..	4	1	3	..	..	3	..	2	221	15	3	..	1	..	..	..	3	15	14
15	**Northwestern University Medical School**	..	2	..	10	3	2	1	..	..	2	13	176	18	17	17	2	1	..	1	3	20	15
16	**University of Chicago, Rush Medical College**	12	..	1	3	..	3	..	..	3	1	6	61	2	8	..	2	..	..	7	9	5	16
17	**University of Chicago, Div. of Biological Sciences**	4	..	..	8	3	..	..	2	1	2	8	136	14	8	3	..	..	1	2	..	18	17
18	**University of Illinois College of Medicine**	..	..	..	2	..	..	..	..	..	1	1	471	13	6	3	3	..	..	1	3	2	18
19	**Indiana University School of Medicine**	..	..	..	2	..	..	..	..	1	1	..	24	342	1	1	8	..	1	..	2	2	19
20	**State University of Iowa College of Medicine**	..	..	..	1	..	..	..	..	1	..	..	13	1	305	5	2	..	..	..	2	2	20
21	**University of Kansas School of Medicine**	..	2	2	8	..	..	..	1	..	..	1	9	..	5	184	..	1	..	..	..	1	21
22	**University of Louisville School of Medicine**	1	..	..	4	..	2	..	..	2	2	1	8	11	1	1	194	..	..	1	..	3	22
23	**Louisiana State University Medical Center**	11	..	1	1	..	..	1	..	5	6	1	4	3	..	5	1	174	..	..	3	1	23
24	**Tulane University of Louisiana School of Medicine**	35	4	21	1	..	..	..	..	32	12	..	2	1	1	..	8	139	..	..	2	..	24
25	**Johns Hopkins University School of Medicine**	5	..	2	12	1	2	1	6	3	6	..	8	3	2	1	5	..	..	58	8	3	25
26	**University of Maryland School of Medicine**	1	..	..	..	1	11	3	6	1	1	..	1	1	1	2	..	..	1	207	7	..	26
27	**Boston University School of Medicine**	..	..	..	..	..	11	..	..	2	..	..	..	..	1	..	..	..	20	..	147	..	27
28	**Harvard University Medical School**	4	4	..	24	4	15	..	1	3	4	3	14	5	3	6	5	..	11	3	137	13	28
29	**Tufts College Medical School**	..	..	..	1	..	39	..	1	..	..	..	..	..	..	..	..	..	26	..	337	..	29
30	**University of Michigan Medical School**	..	1	..	4	1	4	..	1	1	1	..	9	18	3	3	3	..	1	1	13	232	30
31	**Wayne University College of Medicine**	1	..	..	..	..	2	..	..	..	..	..	8	6	..	..	2	..	1	2	6	154	31
32	**University of Minnesota Medical School**	..	..	..	2	..	..	..	1	..	..	..	1	1	2	1	..	..	..	..	1	..	32
33	**University of Mississippi School of Medicine**	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33
34	**University of Missouri School of Medicine**	..	..	1	2	1	..	..	..	..	..	..	3	..	..	3	..	..	..	..	..	1	34
35	**St. Louis University School of Medicine**	1	2	2	24	2	4	..	..	..	2	46	10	5	10	4	..	..	..	6	6	35
36	**Washington University School of Medicine**	9	4	..	14	2	..	1	..	..	2	6	43	4	6	16	3	..	..	1	5	2	36
37	**Creighton University School of Medicine**	..	2	1	60	2	2	..	1	..	..	..	5	1	17	9	..	..	..	..	..	1	37
38	**University of Nebraska College of Medicine**	..	..	1	4	7	..	..	..	..	..	..	8	..	30	8	..	..	..	..	..	4	38
39	**Dartmouth Medical School**	..	..	..	1	1	1	..	..	..	..	..	3	..	..	..	..	..	..	..	..	8	39
40	**Albany Medical College**	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	6	..	40
41	**Long Island College of Medicine**	..	..	..	..	..	6	..	..	..	..	..	..	..	2	..	..	..	..	..	2	1	41
42	**University of Buffalo School of Medicine**	..	..	..	..	..	1	..	..	..	1	..	1	..	..	..	1	1	..	1	3	..	42
43	**Cornell University Medical College**	1	..	..	3	2	9	..	..	1	1	1	..	..	..	3	2	1	..	..	8	1	43
44	**Columbia University College of Phys. and Surgs.**	2	1	..	7	2	21	..	..	1	2	1	3	3	..	1	..	1	2	1	14	1	44
45	**New York Medical College**	..	..	..	3	..	10	..	1	..	..	..	..	..	..	..	..	..	..	1	4	1	45
46	**New York University College of Medicine**	1	..	..	..	1	11	..	..	1	1	..	4	..	..	..	1	..	..	..	11	..	46
47	**University of Rochester School of Medicine**	..	..	..	..	..	7	1	..	..	..	4	2	..	..	..	..	2	..	2	11	4	47
48	**Syracuse University College of Medicine**	..	..	..	..	..	2	..	..	..	..	4	..	..	..	..	..	1	..	1	1	2	48
49	**University of North Carolina School of Medicine**	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	49
50	**Duke University School of Medicine**	3	..	..	2	..	2	1	4	3	3	3	..	4	3	..	3	1	..	5	3	2	50
51	**Wake Forest College School of Medicine**	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	1	..	..	51
52	**University of North Dakota School of Medicine**	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	52
53	**University of Cincinnati College of Medicine**	..	..	..	2	..	..	..	..	1	..	..	2	6	..	1	27	..	..	..	1	..	53
54	**Western Reserve University School of Medicine**	..	..	..	..	1	2	..	..	..	..	2	5	4	..	..	2	..	..	1	..	7	54
55	**Ohio State University School of Medicine**	2	..	..	1	..	1	..	..	..	..	..	5	7	..	1	2	..	..	..	..	2	55
56	**University of Oklahoma School of Medicine**	1	..	1	5	1	..	..	..	..	1	1	3	..	2	9	3	1	..	..	..	..	56
57	**University of Oregon Medical School**	..	..	1	6	..	..	..	..	..	1	10	8	..	2	1	..	..	..	..	..	..	57
58	**Hahnemann Medical College**	..	..	..	1	..	16	7	2	1	1	..	3	2	..	..	1	..	2	..	7	..	58
59	**Jefferson Medical College of Philadelphia**	2	..	..	4	..	11	9	1	1	2	..	2	2	..	4	..	..	6	7	3	4	59
60	**Temple University School of Medicine**	2	..	..	..	..	3	1	..	1	1	..	1	..	..	2	1	..	1	2	3	2	60
61	**University of Pennsylvania School of Medicine**	2	1	..	3	1	2	3	1	..	2	2	1	..	1	1	3	..	5	2	7	1	61
62	**Woman's Medical College of Pennsylvania**	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1	..	..	1	3	1	62
63	**University of Pittsburgh School of Medicine**	..	..	..	1	..	1	1	1	..	..	..	1	..	..	..	..	..	..	..	1	..	63
64	**Medical College of the State of South Carolina**	1	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	64
65	**University of South Dakota School of Medicine**	..	..	1	2	..	..	..	..	..	..	..	..	7	..	..	..	..	..	..	..	..	65
66	**University of Tennessee College of Medicine**	18	..	13	1	..	1	..	1	3	4	13	10	3	1	1	25	2	..	..	..	..	66
67	**Meharry Medical College**	4	..	6	1	..	1	..	7	4	7	..	2	..	1	2	1	11	1	4	1	3	67
68	**Vanderbilt University School of Medicine**	15	1	2	1	..	..	..	..	3	4	1	4	1	..	..	30	..	..	1	4	8	68
69	**Baylor University College of Medicine**	2	1	4	5	3	2	..	1	..	..	1	10	1	3	5	1	5	..	..	1	3	69
70	**University of Texas School of Medicine**	..	..	5	..	2	1	..	1	..	2	1	1	1	..	2	..	4	..	..	..	1	70
71	**University of Utah School of Medicine**	..	..	..	2	..	..	..	..	..	..	5	2	..	1	..	..	..	..	..	..	1	71
72	**University of Vermont College of Medicine**	..	..	..	1	..	16	1	..	..	..	..	..	..	..	..	..	..	7	..	17	..	72
73	**University of Virginia Department of Medicine**	1	..	..	1	..	1	3	2	3	1	..	..	..	..	2	..	1	2	2	..	3	73
74	**Medical College of Virginia**	2	..	..	4	..	1	..	5	3	1	1	1	..	1	..	2	..	2	3	2	74
75	**West Virginia University School of Medicine**	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	75
76	**University of Wisconsin Medical School**	..	..	..	1	1	..	..	..	1	1	24	3	2	1	..	..	..	..	..	2	76
77	**Marquette University School of Medicine**	..	..	..	6	..	3	1	..	..	..	6	2	2	..	..	..	..	..	..	3	19	77
78	**University of Alberta Faculty of Medicine**	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	2	1	78
79	**University of Manitoba Faculty of Medicine**	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	79
80	**Dalhousie University Faculty of Medicine**	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	80
81	**Queen's University Faculty of Medicine**	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	2	1	81
82	**University of Western Ontario Medical School**	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	82
83	**University of Toronto Faculty of Medicine**	..	..	..	2	..	..	..	..	..	..	..	..	..	2	1	..	..	1	1	5	2	83
84	**McGill University Faculty of Medicine**	..	1	..	39	1	4	..	..	..	1	1	4	..	4	..	..	1	4	3	26	6	84
85	**University of Montreal Faculty of Medicine**	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	6	..	85
86	**Laval University Faculty of Medicine**	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	86
87	**Univ. of Saskatchewan School of Med. Sciences**	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	87
	Tota's	213	37	280	679	245	311	39	164	116	345	94	1524	533	490	331	357	353	121	350	947	606	

V 107
1936

of Students

Marginal Number	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Possessions	Canada	Foreign	Totals	Marginal Number
1	1	2	..	..	..	..	..	6	..	18	1	..	4	..	..	6	2	..	..	..	..	..	..	1	..	..	..	..	..	112	1	1
2	..	3	7	..	..	..	..	9	..	23	..	..	3	10	..	2	..	..	1	1	7	..	..	1	1	3	2	..	..	..	..	239	2
3	5	..	2	2	2	..	..	5	..	15	..	1	4	..	3	8	..	..	..	1	1	3	..	..	4	..	2	1	2	5	18	238	3
4	11	2	6	4	4	4	1	7	2	20	2	7	7	4	3	10	2	..	5	6	5	1	..	2	26	1	9	1	7	16	52	394	4
5	3	..	5	3	6	2	..	..	..	10	..	2	7	..	2	6	1	..	1	..	1	3	..	2	4	..	3	1	2	5	7	190	5
6	2	..	2	..	6	2	..	6	3	11	1	..	3	3	6	5	1	..	..	1	4	6	..	..	12	..	2	..	..	2	..	234	6
7	1	..	..	1	1	..	..	..	5	10	..	..	2	1	1	..	2	..	..	..	2	2	..	..	2	1	..	1	..	..	..	205	7
8	3	..	4	1	1	..	2	14	..	45	..	..	12	..	1	9	6	..	..	..	1	2	..	1	..	1	..	1	3	11	206	8
9	..	..	1	1	..	..	..	75	..	147	2	1	10	..	..	77	24	..	..	..	..	..	..	4	2	3	..	1	1	7	474	9
10	2	1	1	1	..	1	..	11	2	38	1	..	8	..	..	28	1	1	2	3	1	8	..	8	2	3	1	1	2	1	17	258	10
11	..	1	..	..	..	..	..	9	..	17	7	..	1	1	..	13	..	4	..	..	3	..	..	13	..	3	..	1	..	..	39	142	11
12	..	1	1	..	1	..	1	4	..	13	16	..	5	..	..	1	..	6	..	2	1	..	..	1	..	1	..	..	..	..	1	223	12
13	..	1	1	..	..	..	..	1	..	5	4	..	..	..	..	2	..	..	..	..	..	..	..	1	..	2	2	..	..	..	2	148	13
14	5	..	1	3	..	1	..	14	..	38	..	4	31	..	..	19	..	..	..	..	..	..	..	..	2	2	4	..	6	2	2	207	14
15	24	2	15	12	15	..	..	4	2	5	6	29	17	3	4	9	..	..	14	1	1	16	..	1	30	5	44	2	5	5	14	564	15
16	12	4	12	1	2	..	2	8	..	40	1	19	12	..	..	12	..	..	13	1	1	12	..	..	5	16	13	1	1	2	15	321	16
17	7	1	4	1	3	2	..	9	1	15	..	5	8	1	1	2	..	1	1	..	5	5	..	1	9	..	8	..	4	1	6	311	17
18	5	1	5	..	3	..	..	4	..	21	1	..	6	1	1	5	1	..	2	1	2	1	..	..	2	1	6	2	2	7	53	637	18
19	..	..	4	1	..	..	..	5	..	8	..	1	13	..	1	2	..	..	..	1	1	..	..	1	..	..	1	..	1	1	7	432	19
20	3	1	4	3	5	..	..	6	..	5	..	4	3	1	2	1	..	..	6	..	1	..	..	1	1	2	1	..	..	..	11	393	20
21	..	..	50	1	2	..	..	..	..	1	..	..	3	10	1	2	..	..	1	..	3	..	..	..	1	1	1	..	..	..	4	295	21
22	..	1	9	..	..	..	..	8	..	21	..	2	21	..	..	7	..	1	3	..	7	..	1	3	19	4	..	2	..	2	2	342	22
23	1	15	2	..	..	..	..	5	..	23	6	..	1	3	..	5	..	3	..	3	18	5	..	1	..	..	2	..	..	1	4	315	23
24	..	51	4	3	..	..	..	7	3	8	6	..	..	13	..	6	..	6	..	6	68	1	..	..	..	1	1	1	12	..	19	470	24
25	6	..	2	..	2	1	..	14	1	37	3	1	11	5	2	25	2	3	..	6	2	..	3	..	13	1	1	2	..	..	5	271	25
26	..	..	..	..	..	..	..	23	..	53	7	..	1	1	..	39	2	2	..	2	..	3	..	5	..	15	..	..	4	2	11	414	26
27	..	..	..	..	..	..	18	3	..	32	..	..	1	..	..	2	8	..	..	..	..	..	1	..	..	..	..	..	..	..	1	248	27
28	10	1	14	..	4	1	8	29	..	70	14	2	23	..	3	19	14	1	..	3	6	2	4	4	9	3	11	..	4	1	10	529	28
29	..	..	..	..	..	..	15	2	..	14	..	..	..	..	..	3	29	..	1	..	..	..	1	1	..	..	1	..	1	..	..	474	29
30	3	1	5	3	..	..	..	14	..	55	1	2	37	1	1	23	1	..	..	2	1	..	..	1	2	1	..	3	2	6	25	481	30
31	1	..	3	..	..	..	..	2	..	31	..	..	24	..	..	8	1	..	..	..	..	..	..	1	2	3	..	..	13	29	300	31
32	455	..	1	6	2	..	..	1	..	5	..	9	..	1	..	..	..	..	8	..	..	..	..	..	..	1	10	..	3	..	2	513	32
33	..	17	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	19	33
34	..	..	..	..	..	..	..	2	..	2	..	..	1	1	..	..	..	..	..	..	1	..	..	1	..	..	1	..	..	..	3	80	34
35	7	2	110	12	1	1	..	18	1	90	..	..	82	4	..	24	3	..	..	..	8	2	1	1	8	..	2	..	..	2	1	504	35
36	1	5	128	2	2	1	1	5	1	12	3	1	10	5	2	7	..	..	4	2	4	6	..	1	6	4	5	1	3	..	15	355	36
37	7	..	4	2	68	1	..	7	1	40	..	2	5	3	7	3	..	..	11	1	..	5	2	..	7	..	2	3	3	..	3	287	37
38	5	1	9	1	224	..	..	..	..	5	..	1	3	1	..	1	..	..	5	..	..	2	..	..	..	..	2	2	..	4	3	328	38
39	..	..	..	..	..	..	2	3	..	12	..	..	1	..	..	3	..	..	..	..	..	3	..	1	..	2	..	..	..	..	1	43	39
40	..	..	1	..	..	..	1	2	..	78	1	..	..	..	..	4	1	..	..	..	..	1	..	..	..	..	..	..	..	..	3	100	40
41	..	..	..	..	1	..	..	25	..	312	..	..	3	..	1	5	1	..	..	..	..	..	..	..	..	..	..	..	..	..	24	383	41
42	..	..	2	..	..	..	..	3	..	224	..	..	2	..	..	14	1	..	..	..	..	..	..	1	..	..	..	..	..	3	8	268	42
43	..	..	2	..	..	..	..	36	..	181	1	..	4	..	..	16	2	2	..	..	..	1	..	1	3	2	..	1	..	..	1	286	43
44	2	..	1	..	1	1	3	56	..	230	2	..	3	1	1	7	2	2	..	..	..	3	1	2	3	1	1	..	2	1	3	392	44
45	..	..	..	..	..	..	..	34	..	239	..	..	10	..	..	7	3	..	..	1	..	..	..	..	..	..	..	..	..	..	1	315	45
46	..	..	3	..	..	..	1	40	..	402	..	..	4	..	..	5	1	..	..	1	1	..	..	..	..	..	1	..	..	..	1	29	521	46
47	..	..	1	..	..	..	1	6	..	89	..	..	16	2	..	7	..	..	..	1	..	1	1	1	1	..	1	..	..	1	4	168	47
48	..	..	..	..	1	..	1	9	..	128	1	..	2	..	..	4	4	..	..	..	..	2	..	..	2	..	2	..	1	2	7	174	48
49	..	..	..	..	..	..	..	1	..	5	64	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	74	49
50	2	..	1	1	2	..	1	17	..	28	47	1	1	5	2	27	..	3	1	4	2	2	1	3	3	5	1	..	..	1	6	219	50
51	..	..	..	..	..	..	..	..	..	..	49	..	..	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..	1	..	56	51
52	12	..	..	1	..	..	..	..	..	1	..	38	..	..	..	1	..	..	2	..	..	..	..	..	..	..	1	..	..	2	..	59	52
53	..	..	..	..	..	..	..	1	..	9	1	..	228	..	..	2	..	..	..	..	..	1	..	2	..	..	..	..	..	..	1	286	53
54	..	..	..	..	1	..	..	3	..	15	..	..	166	..	..	23	1	..	2	..	..	..	..	2	2	4	1	..	2	2	12	261	54
55	..	..	2	..	2	..	..	4	..	16	..	..	294	..	..	12	..	..	..	2	..	..	..	2	..	5	1	..	3	1	16	381	55
56	1	..	12	..	2	..	..	..	1	1	1	..	4	157	..	5	..	..	..	1	15	..	..	..	..	..	..	..	..	..	1	240	56
57	7	..	4	3	6	..	..	3	3	3	..	..	99	2	..	2	..	..	2	..	..	5	..	..	45	..	1	2	2	7	11	234	57
58	..	1	4	..	..	..	2	75	..	47	..	..	13	1	..	319	7	..	..	..	..	1	..	2	1	1	1	..	6	..	..	534	58
59	2	..	1	3	..	..	1	49	1	35	20	..	16	..	2	290	10	..	..	..	..	3	..	2	9	2	..	7	..	14	533	59
60	2	..	2	..	..	..	..	45	..	38	14	..	4	..	..	324	..	3	..	..	..	1	..	1	6	1	6	1	..	8	8	465	60
61	2	..	6	1	1	1	2	39	..	25	17	2	16	3	..	311	..	..	1	6	..	3	..	5	5	4	5	1	1	2	18	515	61
62	..	..	1	1	..	..	..	7	..	30	2	..	5	..	..	46	1	..	..	..	1	..	..	..	2	1	1	..	..	..	10	116	62
63	..	..	..	..	..	..	..	..	..	1	..	..	2	..	..	233	..	..	..	..	..	..	..	1	..	3	..	..	..	2	5	252	63
64	..	..	..	..	..	..	..	..	..	2	4	..	..	..	..	..	..	150	..	..	..	..	..	..	..	..	..	..	..	..	..	100	64
65	2	..	..	..	1	..	..	..	..	2	..	..	..	..	..	1	..	..	32	..	..	..	..	2	1	..	..	1	..	1	54	65
66	..	68	9	..	2	..	..	1	..	8	7	1	15	..	..	6	..	3	..	198	15	..	..	3	1	3	1	..	..	..	4	429	66
67	..	5	1	..	2	..	..	13	..	9	13	..	6	1	..	9	..	9	..	13	8	..	..	19	..	7	..	..	..	..	12	183	67
68	..	15	3	..	1	..	..	3	..	9	10	1	5	5	..	2	1	11	..	49	9	..	..	..	3	1	..	..	..	..	3	203	68
69	..	1	7	..	2	..	..	..	4	24	1	..	1	19	..	..	..	..	1	2	217	1	..	1	1	1	2	..	1	..	16	350	69
70	..	4	1	..	..	..	1	..	2	4	..	1	4	3	..	..	..	..	..	4	301	..	..	1	..	..	1	..	..	1	..	355	70
71	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	43	..	..	..	..	..	..	1	..	..	..	..	2	58	71
72	..	..	..	..	1	..	3	3	..	84	..	..	1	..	..	..	..	2	..	..	..	..	77	..	..	..	..	..	..	..	4	171	72
73	..	1	..	..	..	..	..	7	..	6	6	2	..	..	..	2	..	8	..	..	..	..	..	174	2	17	..	..	..	..	1	245	73
74	..	..	2	..	..	1	..	3	..	31	26	2	3	..	..	19	..	2	..	1	..	..	..	117	1	55	1	..	8	1	8	309	74
75	..	..	..	..	..	..	..	1	..	3	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	59	..	..	1	..	..	66	75
76	7	..	2	1	1	..	1	..	..	8	1	2	2	..	..	2	1	..	6	..	1	..	..	..	2	..	226	..	..	2	6	307	76
77	16	..	2	1	..	..	1	8	..	40	..	1	8	..	1	4	1	..	1	..	..	..	..	1	2	..	156	..	3	1	17	306	77
78	2	..	..	1	1	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	183	..	194	78
79	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	180	18	201	79
80	..	..	..	..	..	..	..	7	..	53	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	92	..	157	80
81	..	..	..	..	..	..	..	1	..	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	296	3	318	81
82	..	..	1	..	..	..	..	4	..	18	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	190	..	218	82
83	..	..	2	..	..	..	..	1	..	8	..	..	2	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	764	58	853	83
84	1	..	4	1	1	5	16	10	..	43	3	1	4	1	1	10	4	..	..	4	..	2	..	14	..	7	..	..	..	215	27	469	84
85	..	..	..	..	..	..	5	..	2	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	161	5	183	85
86	..	..	..	..	..	..	6	..	..	12	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	230	2	265	86
87	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	42	7	51	87
	638	208	551	79	384	27	96	853	37	3469	374	139	1211	288	156	2125	146	229	124	325	727	155	95	415	233	379	566	24	112	2478	795	25,473	

(Continued from page 661)

college work if the baccalaureate degree is conferred in absentia at the end of the first year in medicine, and one school has a requirement equivalent to two and one-half years. The medical schools in Canada also vary in their preliminary requirement. One requires a degree, one has a three year prerequisite, three require two years, one requires one year, and four schools have a six year medical course including premedical studies.

While the two year minimum college prerequisite has been exacted by the Council for eighteen years, there are still eight states which have not revised or amended their statutes to conform, although these same states, with possibly one or two exceptions, do not license other than graduates of approved schools.

MEDICAL COURSE DURATION

The medical course in the United States in general is taught in four years of approximately thirty-two weeks each. The medical schools of the universities of Minnesota, Duke and Tennessee operate on the quarter plan, enabling the student by utilizing the summer months to complete the course in three calendar years. The medical schools of the University of Chicago permit a student to progress as rapidly as he desires. Fourteen medical schools in the United States require a year of internship or research as a part of the medical course, thereby lengthening the course to five years, the degree of Doctor of Medicine being conferred after completion of the internship. Duke University requires a two year internship. Ten schools offer only a two year course.

Five of the medical schools of Canada offer a five year course, four have a six year course including premedical subjects, and the University of Saskatchewan offers courses in the medical sciences only which are covered in two years. Four Canadian schools require an internship for graduation.

These data are included in table 1.

CURRICULUM

The medical curriculum, as outlined in the Essentials of an Acceptable Medical School, published on pages 684, consists of from 3,600 to 4,400 hours, distributed as from 900 to 1,100 hours a year and grouped under nine headings; namely, anatomy (including embryology and histology); physiology; biochemistry; pathology, bacteriology and immunology; pharmacology; hygiene and sanitation; general medicine; general surgery, and obstetrics and gynecology. A certain percentage of hours of the whole number of hours in the courses is required in each of these groups. The Association of American Medical Colleges maintains the same standard with respect to the curriculum.

STATISTICS OF MEDICAL SCHOOLS

Table 1, pages 662 and 663, lists the medical schools in the United States and Canada approved by the Council on Medical Education and Hospitals of the American Medical Association during 1935-1936 and contains figures regarding the premedical requirement for entrance for the session 1936-1937, length of the medical course by years, enrolment by classes for the session 1935-1936, including fifth year students interning or engaged in research, number of graduates since July 1, 1935, dates of the beginning and ending of the forthcoming session, and the month until which applicants for admission to the freshman class are received. Changes in the classification that have taken place since the publication of the educational statistics in 1935 [2] can be noted in the footnotes at the bottom of the table and refer to those schools which are marked by asterisks preceding the name. Also contained in the footnotes are references to the fifth and sixth year enrolments and those schools which admit students at varying times during the year. Duke University and the two medical schools of the University of Chicago do not report their students by classes and in this tabulation, therefore, only the total enrolment is given.

The data presented in this table constitute the basis also for several of the subsequent tabulations. Beginning on page 686 are given historical information and essential facts concerning the schools arranged by states.

Seventy-seven institutions in the United States and ten in Canada are listed. With the exception of three, all these schools at the present time are approved by the Council. In eighty-four schools there were 6,646 freshman students enrolled, 6,060 sophomores, 5,755 juniors, 5,554 seniors, 380 fifth year and 227 sixth year students, during the session just ended. In the two medical schools of the University of Chicago and Duke University School of Medicine there were 851 students enrolled, making a total of 25,473 in the eighty-seven schools listed. In the United States there were 6,005 freshmen, 5,458 sophomores, 5,230 juniors, 5,020 seniors, and the 851 students from the schools just mentioned, a total of 22,564. The total students registered by classes in the United States was 21,713. The enrolment in the ten Canadian schools was as follows: first year, 641; second year, 602; third year, 525; fourth year, 534; fifth year, 380, and sixth year, 227, a total of 2,909. The 25,473 medical students enrolled do not include 1,213 in the United States and 124 in Canada interning as a requirement for the degree of Doctor of Medicine.

Since July 1, 1935, 5,656 received M.D. degrees, 5,183 from schools in the United States and 473 from Canadian institutions.

In addition, there were 130 part-time, 267 special and 751 graduate students studying in medical schools.

Ten medical schools had an enrolment of less than 100 students. None of the schools comprising this figure give the complete medical course. Fourteen schools matriculated fewer than 200 but more than 100, twenty-four less than 300, nineteen fewer than 400, nine less than 500 and 600, respectively. Two schools matriculated more than 600 students. The smallest enrolment (nineteen) was at the University of Mississippi School of Medicine, which for the session 1935-1936 did not offer instruction to freshmen. Not being a complete medical school, the figure given represents sophomore students only. The greatest number (853) were enrolled in the University of Toronto Faculty of Medicine, which has a six year course including premedical subjects. The corresponding high figure among schools in the United States was (637) at the University of Illinois College of Medicine. The lowest enrolment among four year colleges in the United States was (100) at Albany Medical College. This school likewise awarded M.D. degrees to the smallest group (twenty-five) since July 1, 1935. The school graduating the greatest number was Northwestern University Medical School, which awarded 160 diplomas.

The majority of schools will begin the session 1936-1937 about the middle of September and end early in June.

2. J. A. M. A. **105**: 678 (Aug. 31) 1935.

V 107
1936

Of sixty-seven schools that replied to the inquiry regarding the month until which applications for admission to the first year class will be received, two replied February, ten March, seven April, six May, ten June, eight July, five August, seventeen September and one each gave October and December.

The name of the dean or administrative officer of each institution is also given in table 1.

BIRTHPLACE OF STUDENTS

In table 2, pages 664 and 665, the birth state of students in attendance in medical schools during 1935-1936 is shown by schools. The state furnishing the greatest number of students according to state of birth was New York 3,469, followed by Pennsylvania with 2,125, Illinois with 1,524 and Massachusetts with 947.

From the twelve states in which no medical schools are located there were enrolled as students the following:

	Number Enrolled	Number of Schools
Arizona	37	19
Delaware	39	16
Florida	116	34
Idaho	94	33
Maine	121	30
Montana	79	32
Nevada	27	16
New Jersey	853	65
New Mexico	37	19
Rhode Island	146	36
Washington	233	44
Wyoming	24	18
	1,806	

There were 112 born in the United States possessions and 795 in foreign countries. In addition, 2,478 Canadians were also studying medicine, 115 of whom were matriculated in schools in the United States and 2,363 in Canadian schools.

TABLE 3.—*Students Classified by Birthplace*

State	Number of Schools	Attending School in State of Birth	Birthplace Elsewhere
Alabama	1	49	63
Arkansas	1	195	94
California	4	360	696
Colorado	1	161	44
Connecticut	1	41	165
District of Columbia	3	112	762
Georgia	2	253	118
Illinois	5	1,165	1,175
Indiana	1	342	90
Iowa	1	305	88
Kansas	1	194	111
Kentucky	1	194	148
Louisiana	2	313	472
Maryland	2	265	420
Massachusetts	3	621	630
Michigan	2	386	395
Minnesota	1	455	58
Mississippi	1	17	2
Missouri	3	296	643
Nebraska	2	202	223
New Hampshire	1	2	41
New York	9	1,883	724
North Carolina	3	160	189
North Dakota	1	38	21
Ohio	3	688	240
Oklahoma	1	157	83
Oregon	1	99	135
Pennsylvania	6	1,531	874
South Carolina	1	170	10
South Dakota	1	32	22
Tennessee	3	260	555
Texas	2	518	187
Utah	1	43	15
Vermont	1	77	94
Virginia	2	291	263
West Virginia	1	59	7
Wisconsin	2	382	231
Canada	10	2,363	546
Totals	87	14,739	10,734

This table is being reproduced for the second time. A similar tabulation in previous years recorded the home state, or residence, of medical students. Since, however, there is no uniformity among schools or students in the meaning attached to the word residence, an effort to ascertain whether students go to schools outside their home state to study has been made in the manner presented in this issue. Very few schools have defined the terms "resident" and "nonresident" in such a way as to make them of real value in the classification of students. Indiana and Michigan have legally defined the term.

In table 3 the classification of students is further classified by birthplace, indicating that 14,739 are studying in the state of their birth and 10,734 elsewhere. This is particularly significant in Illinois, where, of the 2,340 students in five schools, 1,175 were born outside the state.

More than 800 born elsewhere are studying in Pennsylvania, while 724 in this group are in New York schools. Altogether, 42.1 per cent are studying in schools located in other than their birth state. Eliminating the 1,806 born in states having no medical school, there are still 8,928 of the total number of students, 25,473, studying outside their birth state.

A perusal of table 3 will show many instances wherein the number studying elsewhere far exceeds the number attending school in the state of birth. It also shows some states in which the contrary is the case, notably Indiana, Iowa, Minnesota, Ohio, South Carolina and Texas.

It is conceded that this tabulation does not present an absolutely true picture in that all those studying in schools located in states other than their birthplace cannot be classed as nonresidents, since they may have established their homes in other states. It is believed, however, that the table reveals a trend which may be of interest.

TABLE 4.—*Schools, Students, and Graduates by States**

State	Schools	Students	Graduates
Alabama	1	112	...
Arkansas	1	280	48
California	4	1,056	217
Colorado	1	205	50
Connecticut	1	206	44
District of Columbia	3	874	238
Georgia	2	371	90
Illinois	5	2,340	591
Indiana	1	432	108
Iowa	1	393	94
Kansas	1	295	72
Kentucky	1	342	87
Louisiana	2	785	161
Maryland	2	685	163
Massachusetts	3	1,251	312
Michigan	2	781	187
Minnesota	1	513	126
Mississippi	1	19	...
Missouri	3	939	212
Nebraska	2	615	147
New Hampshire	1	43	...
New York	9	2,607	635
North Carolina	3	349	88
North Dakota	1	59	...
Ohio	3	928	215
Oklahoma	1	240	58
Oregon	1	204	55
Pennsylvania	6	2,405	588
South Carolina	1	160	32
South Dakota	1	54	...
Tennessee	3	815	186
Texas	2	705	154
Utah	1	58	...
Vermont	1	171	41
Virginia	2	554	123
West Virginia	1	66	...
Wisconsin	2	613	111
Totals	77	22,564	5,183

* Excluding fifth or intern year students.

In table 4 the number of schools, students and graduates for each state are given in table 4. New York, with the largest number of schools, nine, naturally had the greatest number of students and graduates, 2,607 and

SCHOOLS, STUDENTS AND GRADUATES BY STATES

635 respectively. Pennsylvania with six schools had 2,405 students and 588 graduates. Illinois with five schools, 2,340 students and 591 graduates ranks in the third largest group. In four schools in California there were 1,056 students and 217 graduates, while in three schools in Massachusetts there were 1,251 students and 312 graduates. Other states had fewer than 1,000 medical students and 300 graduates. In the seventy-seven medical schools in the United States, including those that offer only preclinical courses, there were 22,564 students and 5,183 graduates. Students interning as a requirement for the degree, or fifth year students, are not included in the figure 22,564. Also excluded are part-time, special and graduate students.

REQUIRED HOSPITAL INTERNSHIPS

In tables 5 and 6 are listed the medical schools and state licensing boards now requiring internships for the M.D. degree and state licensure respectively. Some medical schools will accept research or other clinical work in lieu of the internship. The effective date of the requirement is shown in both tables. Fifteen schools in the United States and three in Canada exact the internship requisite. The M.D. degree has been conditioned on an internship at the University of Minnesota Medical School since 1915. McGill University Faculty of Medicine has announced the reorganization of its medical curriculum into a course of five years including an internship. The new plan, which goes into effect in September, will replace the present undergraduate course, now spread over five academic years of seven and a half months each, by a course covering four years of nine months each. The fifth year may be spent in an internship in an approved hospital or in further medical study at McGill or at another medical school approved by it.

TABLE 5.—*Internship Required by Medical Schools*

United States	Effective Date
University of California Medical School	1919
College of Medical Evangelists	1927
University of Southern California School of Medicine	1933
Stanford University School of Medicine	1919
Loyola University School of Medicine	1922
Northwestern University Medical School	1920
University of Chicago, Rush Medical College	1919
University of Chicago, The School of Medicine of the Division of the Biological Sciences	1930
University of Illinois College of Medicine	1922
Louisiana State University Medical Center	1934
Wayne University College of Medicine	1924
University of Minnesota Medical School	1915
Duke University School of Medicine*	1932
University of Cincinnati College of Medicine	1926
Marquette University School of Medicine	1920
Canada	
University of Manitoba Faculty of Medicine	
Dalhousie University Faculty of Medicine	
McGill University Faculty of Medicine**	
University of Montreal Faculty of Medicine	

* Requires a two-year internship.
** Effective, session 1936-1937.

TABLE 6.—*Internship Required by Medical Licensing Boards*

	Effective Date		Effective Date
Alaska	1917	Pennsylvania	1914
Delaware	1924	Rhode Island	1917
District of Columbia	1930	South Dakota	1925
Illinois	1923	Utah	1926
Iowa	1924	Vermont	1934
Michigan	1922	Washington	1919
New Jersey	1916	West Virginia	1932
North Dakota	1918	Wisconsin	1927
Oklahoma	1933	Wyoming	1931
Oregon	1933		

As revealed in table 6, seventeen states, Alaska and the District of Columbia require that applicants for licensure possess a hospital internship. The first state exacting the internship was Pennsylvania in 1914 and the last one Vermont, affecting the graduates of 1934 and thereafter.

During 1935-1936 there were 1,213 students of the United States and 124 in Canada reported as interns, a total of 1,337.

Duke University School of Medicine grants the degree after the completion of the senior year, but all graduates are required to spend at least two years in hospital or laboratory work after graduation.

While some of the medical schools and licensing boards may have their own list of hospitals recommended for intern training, generally the Council's list of hospitals approved for internships is followed. A revised edition will be found beginning on page 693.

NECROPSIES IN HOSPITALS APPROVED FOR INTERNSHIPS

Publication of the list of approved internship hospitals most successful in necropsy performance has had several salutary results. In this way it is possible to assign credit to hospitals for meritorious, scientific interest and accomplishment. Also it has strengthened the opinion that any hospital conducted under any auspices and in any community can, by industry and cooperation, develop a beneficial necropsy program.

In spite of the vast improvement in necropsy performance demonstrated in this select group of hospitals (table 8), about one half are still below 30 per cent, which is the figure considered procurable in every hospital if consent for postmortem study is requested as a routine.

TABLE 7.—*Approved Internship Hospitals with Highest Necropsy Percentages, 1935*

	Control	Deaths	Necropsies	Necropsy Percentage
1. Kansas City General Hosp., Kansas City, Mo.	City	823	761	92.5
2. Columbus Hospital, Chicago	Church	45	40	88.9
3. Research and Educational Hospital, Chicago	State	223	197	88.3
4. Mary Hitchcock Memorial Hospital, Hanover, N. H.	NPAssn	114	99	86.8
5. St. Luke's Hospital, Kansas City, Mo.	Church	145	123	84.8
6. William Beaumont General Hospital, El Paso, Texas	Army	26	22	84.6
7. St. Joseph Hospital, Kansas City, Mo.	Church	213	179	84.0
8. Univ. of Kansas Hosps., Kansas City, Kan.	State	258	216	83.7
9. Colorado General Hospital, Denver	State	215	175	81.4
10. Johns Hopkins Hospital, Baltimore	NPAssn	628	505	80.4
11. Station Hospital, San Antonio, Texas	Army	80	64	80.0
12. University of Nebraska Hospital, Omaha	State	137	107	78.1
13. Santa Fe Coast Lines Hospital, Los Angeles	NPAssn	76	59	77.6
14. U. S. Marine Hospital, Norfolk, Va.	USPHS	82	62	75.6
15. Trinity Hospital, Minot, N. D.	Church	142	106	74.6
16. U. S. Marine Hospital, Seattle	USPHS	124	92	74.2
17. Letterman General Hospital, San Francisco	Army	85	63	74.1
18. St. Mary's Hospital, Duluth, Minn.	Church	269	197	73.2
19. Bon Secours Hospital, Baltimore	Church	74	54	73.0
20. Research Hospital, Kansas City, Mo.	NPAssn	170	124	72.9

NPAssn, nonprofit association; USPHS, U. S. Public Health Service.

TABLE 8.—*Necropsy Performance in Approved Hospitals*

Percentage	Number of Hospitals			
	1926	1930	1934	1935
15 to 29	146	354	371	339
30 to 49	68	164	239	257
50 to 69	21	56	59	73
70 and above	14	19	28	30

V 107
1936

GRADUATES AND INTERNSHIPS

Table 9 contains figures regarding graduates of the United States and Canada from July 1, 1934, to July 1, 1935, who have obtained internships during the period July 1, 1935, to July 1, 1936. Included also are figures for those schools which require the internship or other acceptable clinical work as a requirement for graduation. There were 5,491 fifth year students or graduates serving internships during the period July 1, 1935, to July 1, 1936. The number of graduates or those who completed the medical course during the period from July 1, 1934, to July 1, 1935, was 5,611. Of this figure 120 either were not successful in securing or did not desire internships. In the Canadian schools, of the 483 graduates or intern students, 449 were serving internships and thirty-four are unaccounted for. In the United States there were 5,128 graduates or students, of whom 5,042 were interning, leaving eighty-six not serving internships during this period.

Of the 5,491 interns, 1,213 in the United States and 124 in Canada were fulfilling the intern requirement for the M.D. degree, a total of 1,337; and 4,154 of the 4,274 M.D. graduates were also interning, of whom 359 were Canadian graduates and 325 interns, and 3,915 graduates of United States schools and 3,829 interns.

With the exception of one in Canada, every school in the list has more than 90 per cent of its graduates serving internships, and in twenty-three schools 100 per cent interned. Excluding those schools that require the internship for graduation, ninety-eight per cent of all graduates here listed have this added experience.

TABLE 9.—*Graduates from July 1, 1934, to July 1, 1935, Who Have Obtained Internships During the Period July 1, 1935, to July 1, 1936*

School	Number Graduates	Number Interning
University of Arkansas	42	39
University of California	56*	56
College of Medical Evangelists	92*	92
University of Southern California	30*	30
Stanford University	45*	45
University of Colorado	47	47
Yale University	47	47
Georgetown University	113	112
George Washington University	71	68
Howard University	55	52
Emory University	54	54
University of Georgia	34	32
Loyola University	98*	98
Northwestern University	149*	149
Rush Medical College	149*	149
Division of the Biological Sciences	40*	40
University of Illinois	135*	135
Indiana University	93	92
State University of Iowa	62	61
University of Kansas	67	67
University of Louisville	79	74
Louisiana State University	50*	50
Tulane University	125	120
Johns Hopkins University	69	67
University of Maryland	105	103
Boston University	55	55
Harvard University	137	135
Tufts College	119	117
University of Michigan	105	98
Wayne University	71*	71
University of Minnesota	139*	139
St. Louis University	110	109
Washington University	92	91
Creighton University	69	69
University of Nebraska	77	77
Albany Medical College	28	28
Long Island College of Medicine	98	87
University of Buffalo	66	62
Cornell University	64	64
Columbia University	97	96
New York Medical College	63	57
New York University	136	125
University of Rochester	47	47
Syracuse University	45	45
Duke University	30†	30
University of Cincinnati	68*	68
Western Reserve University	71	71
Ohio State University	86	86
University of Oklahoma	55	55
University of Oregon	54	54
Hahnemann Medical College	102	102
Jefferson Medical College	142	142
Temple University	100	100
University of Pennsylvania	134	134
Woman's Medical College	32	32
University of Pittsburgh	65	60
Medical College of South Carolina	41	40
University of Tennessee	99	97
Meharry Medical College	40	39
Vanderbilt University	51	51
Baylor University	79	79
University of Texas	83	81
University of Vermont	35	31
University of Virginia	54	53
Medical College of Virginia	76	71
University of Wisconsin	55	54
Marquette University	61*	61
University of Alberta	29	29
University of Manitoba	54*	54
Dalhousie University	29*	29
Queen's University	48	44
University of Western Ontario	34	30
University of Toronto	110	104
McGill University	106	105
University of Montreal	41*	41
Laval University	32	13
Totals	5,611	5,491

* Completed medical course. Internship or other acceptable clinical work is a requirement for the M.D. degree.
† Two year internship requirement after graduation.

WOMEN IN MEDICINE IN THE UNITED STATES

As shown in table 10, the number of women students has been rather constant since 1920, although in 1936 there were more than in any one year. During the past year there were 1,133 women studying medicine in the United States, fifty-eight more than last year. The percentage of women to all students for the academic year 1935-1936 was 5.0 as compared with 4.7 in 1935. There were 246 graduates, thirty-nine more than last year. Of all the women matriculants, 116 students were enrolled at the one medical college for women, while 1,017 were matriculated in sixty-seven coeducational schools. From the Woman's Medical College of Pennsylvania, thirty-three were graduated, while 213 secured their degrees from coeducational institutions.

TABLE 10.—*Women in Medicine in the United States*

Year	Women Students	Percentage of All Students	Women Graduates	Percentage of All Graduates
1905	1,073	4.1	219	4.0
1910	907	4.0	116	2.6
1915	592	4.0	92	2.6
1920	818	5.8	122	4.0
1925	910	5.0	204	5.1
1926	935	5.0	212	5.4
1927	964	4.9	189	4.7
1928	929	4.5	207	4.9
1929	925	4.4	214	4.8
1930	955	4.4	204	4.5
1931	990	4.5	217	4.6
1932	955	4.3	208	4.2
1933	1,066	4.7	214	4.4
1934	1,020	4.5	211	4.2
1935	1,077	4.7	207	4.1
1936	1,133	5.0	246	4.7

DISTRIBUTION BY SEX

Students and graduates classified by sex are shown in table 11. There were seventy-five schools which had both men and women students in the United States and Canada, of which fifty-nine had women graduates. Altogether there were 24,219 men and 1,254 women students, and 5,388 men and 268 women graduates. There is one medical college for women, the Woman's Medical College of Pennsylvania, which had 116 students and thirty-three graduates, leaving 1,140 women students pursuing their medical education and 235 who completed the course in coeducational institutions. Of the 25,473 students enrolled in all medical schools, there were 21,431 men and 1,133 women studying in the United States, and 2,788 men and 121 women

in Canadian schools. An average of seventeen women students were enrolled in the seventy-five coeducational institutions in the United States and Canada. There was an average of four graduates from sixty schools.

TABLE 11.—*Distribution by Sex*

School	Students		Graduates	
	Men	Women	Men	Women
University of Alabama	108	4	..	..
University of Arkansas	277	12	47	1
University of California	198	40	51	6
College of Medical Evangelists	365	29	70	15
University of Southern California	182	8	29	1
Stanford University	224	10	44	1
University of Colorado	190	15	47	3
Yale University	188	18	39	5
Georgetown University	474	..	134	..
George Washington University	235	23	65	4
Howard University	135	7	32	3
Emory University	224	..	53	..
University of Georgia	144	4	36	1
Loyola University	487	20	93	5
Northwestern University	550	14	155	5
Rush Medical College	311	10	143	6
Division of the Biological Sciences	274	37	38	2
University of Illinois	601	36	141	3
Indiana University	417	15	107	1
State University of Iowa	377	16	91	3
University of Kansas	280	15	71	1
University of Louisville	335	7	87	..
Louisiana State University	299	16	48	1
Tulane University	458	12	108	4
Johns Hopkins University	246	25	57	9
University of Maryland	405	9	97	..
Boston University	220	28	57	6
Harvard University	529	..	134	..
Tufts College	455	19	112	3
University of Michigan	446	35	109	7
Wayne University	286	14	71	..
University of Minnesota	492	21	121	5
University of Mississippi	17	2	...	..
University of Missouri	78	2	...	..
St. Louis University	504	..	116	..
Washington University	336	19	91	5
Creighton University	282	5	77	..
University of Nebraska	322	6	69	1
Dartmouth Medical School	43	..	...	..
Albany Medical College	94	6	24	1
Long Island College of Medicine	364	19	99	5
University of Buffalo	253	15	57	5
Cornell University	355	31	60	4
Columbia University	353	39	74	11
New York Medical College	294	21	70	7
New York University	490	31	121	10
University of Rochester	156	10	39	3
Syracuse University	169	5	43	2
University of North Carolina	65	9	...	..
Duke University	215	4	38	..
Wake Forest College	55	1	...	..
University of North Dakota	59	..	...	..
University of Cincinnati	273	13	65	1
Western Reserve University	250	11	56	1
Ohio State University	363	18	89	3
University of Oklahoma	226	14	54	4
University of Oregon	217	17	49	6
Hahnemann Medical College	524	..	98	..
Jefferson Medical College	533	..	133	..
Temple University	438	27	117	7
University of Pennsylvania	500	15	137	3
Woman's Medical College	...	116	...	33
University of Pittsburgh	240	12	58	2
Medical College of South Carolina	156	4	32	..
University of South Dakota	54	..	...	..
University of Tennessee	414	15	101	1
Meharry Medical College	176	7	32	..
Vanderbilt University	191	12	48	4
Baylor University	387	13	77	2
University of Texas	330	25	68	7
University of Utah	55	3	...	..
University of Vermont	165	6	40	1
University of Virginia	235	10	47	3
Medical College of Virginia	286	23	68	5
West Virginia University	64	2	...	..
University of Wisconsin	285	22	45	6
Marquette University	302	4	58	2
University of Alberta	185	9	21	..
University of Manitoba	187	14	50	6
Dalhousie University	152	5	25	1
Queen's University	318	..	41	..
University of Western Ontario	206	12	36	2
University of Toronto	794	59	119	7
McGill University	452	17	90	5
University of Montreal	182	1	41	1
Laval University	265	..	38	..
University of Saskatchewan	47	4	..	..
Totals	24,219	1,254	5,388	268

PART-TIME, GRADUATE AND SPECIAL STUDENTS

In fifty-four medical schools of the United States and Canada during 1935-1936 there were, in addition to the regularly enrolled students, 1,148 part-time, special and graduate students pursuing medical subjects. The group consisted of 130 part-time, 267 special and 751 graduate students. The 130 part-time students were enrolled in twenty-one schools; the greatest number (thirty-one) were at Wayne University College of Medicine. The University of Minnesota Medical School had nineteen such students, while St. Louis University School of Medicine had fourteen. Of the special students, the greatest number (fifty-seven) were at Northwestern University Medical School, while Vanderbilt University School of Medicine enrolled thirty-seven and at the School of Medicine of the Division of the Biological Sciences of the University of Chicago there were twenty-three. The 267 special students represented thirty-six schools. Students pursuing subjects leading to higher degrees were studying in twenty-six schools. Altogether, there were 751 such, 185 of whom were at Washington University School of Medicine, seventy at Northwestern University Medical School and sixty-four at the University of Illinois College of Medicine. Both part-time, special and graduate students were studying at the University of Kansas, Johns Hopkins, New York University and Vanderbilt. Among Canadian schools nine part-time, nine special and thirty-six graduate students were enrolled. These data are included in table 12.

TABLE 12.—*Part-Time, Graduate and Special Students in Medical Schools, 1935-1936*

	Part-time Students	Special Students	Graduate Students
University of Arkansas	..	3	..
University of California	..	..	28
University of Southern California	..	18	12
Stanford University	1	..	..
University of Colorado	..	..	31
Georgetown University	..	2	..
Howard University	..	1	..
University of Georgia	..	9	..
Division of Biological Sciences	..	23	..
Loyola University	..	2	..
Northwestern University	..	57	70
Rush Medical College	..	4	6
University of Illinois	..	10	64
Indiana University	3	1	..
State University of Iowa	5	..	8
University of Kansas	5	8	12
Louisiana State University	7	1	..
Johns Hopkins University	3	11	3
University of Maryland	..	1	..
Boston University	8	3	..
Tufts College	..	4	..
University of Michigan	..	7	1
Wayne University	31	..	..
University of Minnesota	19	..	..
St. Louis University	14	..	..
Washington University	..	..	185
Creighton University	..	5	..
University of Nebraska	2	..	10
Albany Medical College	..	1	..
University of Buffalo	..	5	45
Cornell University	..	4	11
Columbia University	..	..	41
New York Medical College	..	..	77
New York University	7	11	52
University of Rochester	..	1	..
University of North Carolina	..	1	..
Duke University	..	1	..
University of Cincinnati	..	8	34
Western Reserve University	2	1	..
University of Oklahoma	1	..	..
University of Oregon	..	7	10
Woman's Medical College	..	1	4
Medical College of South Carolina	1	..	..
University of Tennessee	..	6	5
Vanderbilt University	2	37	3
University of Texas	..	2	..
University of Utah	7	..	..
University of Wisconsin	..	2	..
Marquette University	3	..	3
University of Manitoba	..	3	2
University of Western Ontario	..	6	..
University of Toronto	7	..	32
McGill University	1	..	2
Laval University	1	..	..
Totals	130	267	751

M.D. GRADUATES HOLDING DEGREES IN ARTS OR SCIENCE

From the figures contained in table 13, it can be noted that 4,195 of the 5,656 graduates of medical schools during 1935-1936 hold baccalaureate degrees in

V 107
1936

addition to the medical degree. Figures are not available to show how many of these graduates obtained their degrees subsequent to beginning the medical course. Only five schools in the United States and Canada require a degree for admission, while one requires four years and three admit students with three years of college work if the baccalaureate degree is conferred in absentia at the end of the first year in medicine. Thirty-one schools offer a B.S. in medicine degree at sometime during the medical course. While the entrance requirement of Stanford, the School of Medicine of the Division of the Biological Sciences of the University of Chicago, Rush Medical College, Wayne University, University of Oregon and Vanderbilt University is three years of college work, their entire graduating class for the past session hold baccalaureate degrees. The same is true of the Universities of Oklahoma and Wisconsin, which have only a two year premedical requirement. Since the Division of the Biological Sciences and the Universities of Oklahoma and Wisconsin offer the B.S. degree in Medicine during the medical course, this may account for the fact that all their graduates hold degrees. Among the eight schools that require a degree, three years of college work and a degree after the first medical year, or four years premedical training, only five report that their complete graduating class hold degrees. It may be that the prerequisite was raised in recent years.

TABLE 13.—*M.D. Graduates Holding Degrees in Arts or Science*

	Number of Graduates	Number Holding Degrees
University of Arkansas School of Medicine	48	29
University of California Medical School	57	55
College of Medical Evangelists	85	49
University of Southern California School of Medicine	30	29
Stanford University School of Medicine	45	45
University of Colorado School of Medicine	50	28
Yale University School of Medicine	44	43
Georgetown University School of Medicine	134	101
George Washington University School of Medicine	69	36
Howard University College of Medicine	35	27
Emory University School of Medicine	53	31
University of Georgia School of Medicine	37	15
Loyola University School of Medicine	98	72
Northwestern University Medical School	160	115
University of Chicago, Rush Medical College	149	149
University of Chicago, Div. of the Biological Sciences	40	40
University of Illinois College of Medicine	144	106
Indiana University School of Medicine	108	91
State University of Iowa College of Medicine	94	34
University of Kansas School of Medicine	72	61
University of Louisville School of Medicine	87	58
Louisiana State University Medical Center	49	25
Tulane University of Louisiana School of Medicine	112	58
Johns Hopkins University School of Medicine	66	66
University of Maryland School of Medicine	97	50
Boston University School of Medicine	63	59
Harvard University Medical School	134	129
Tufts College Medical School	115	98
University of Michigan Medical School	116	90
Wayne University College of Medicine	71	71
University of Minnesota Medical School	126	100*
St. Louis University School of Medicine	116	84
Washington University School of Medicine	96	87
Creighton University School of Medicine	77	69
University of Nebraska College of Medicine	70	24
Albany Medical College	25	25
Long Island College of Medicine	104	99
University of Buffalo School of Medicine	62	18
Columbia Univ. College of Physicians and Surgeons	85	84
Cornell University Medical College	64	63
New York Medical College	77	61
New York University College of Medicine	131	125
University of Rochester School of Medicine	42	38
Syracuse University College of Medicine	45	31
Duke University School of Medicine	38	17
University of Cincinnati College of Medicine	66	51
Western Reserve University School of Medicine	57	57
Ohio State University College of Medicine	92	71
University of Oklahoma School of Medicine	58	58
University of Oregon Medical School	55	55
Hahnemann Medical College	98	52
Jefferson Medical College of Philadelphia	133	133
Temple University School of Medicine	124	85
University of Pennsylvania School of Medicine	140	129
Woman's Medical College of Pennsylvania	33	25
University of Pittsburgh School of Medicine	60	45
Medical College of the State of South Carolina	32	19
University of Tennessee College of Medicine	102	41
Meharry Medical College	32	28
Vanderbilt University School of Medicine	52	52
Baylor University College of Medicine	79	30
University of Texas School of Medicine	75	48
University of Vermont College of Medicine	41	27
University of Virginia Department of Medicine	50	28
Medical College of Virginia	73	53
University of Wisconsin Medical School	51	51
Marquette University School of Medicine	60	48
University of Alberta Faculty of Medicine	21	7
University of Manitoba Faculty of Medicine	56	13
Dalhousie University Faculty of Medicine	26	14
Queen's University Faculty of Medicine	41	2
University of Western Ontario Medical School	28	7
University of Toronto Faculty of Medicine	126	25
McGill University Faculty of Medicine	95	81
University of Montreal Faculty of Medicine	43	37
Laval University Faculty of Medicine	38	38
Totals	5,656	4,195

* Estimated figure.

MEDICAL SCHOOLS, STUDENTS AND GRADUATES IN THE UNITED STATES, 1905—1936

The number of medical schools, students and graduates in the United States for each five year period from 1905 to 1920, and for each year since, is shown in table 14. The total number of undergraduate medical students for the college session 1935-1936 was 22,564, a decrease of 324 from the preceding session. In 1905, 26,147 were in attendance at the 160 medical schools then existing. This tabulation includes data for only those taking medical courses leading to the M.D. degree. They do not include part time and special students even though their work may later be accepted for the M.D. degree, since at the time they are reported as part time and special students rather than as candidates for a medical degree. Omitted from these statistics also are university graduate students majoring in the medical school but not candidates for the M.D. degree. In 1905 there were 26,147 students. The next fifteen years shows a steady decrease in enrolment, while from 1921 to 1935 there was a continuous increase. The Council a year ago issued a general warning against the admission of larger classes than can properly be accommodated or than can reasonably be expected to satisfy approved scholastic standards. Several schools immediately decreased their freshman enrolment and others have indicated adherence to the Council's principles as soon as practicable.

TABLE 14.—*Schools, Students and Graduates in the United States—1905-1936*

Year	No. Schools	Students*	Graduates
1905	160	26,147	5,606
1910	131	21,526	4,440
1915	96	14,891	3,536
1920	85	13,798	3,047
1921	83	14,466	3,186
1922	81	15,635	2,580
1923	80	16,960	3,120
1924	79	17,728	3,562
1925	80	18,200	3,974
1926	79	18,840	3,962
1927	80	19,662	4,035
1928	80	20,545	4,262
1929	76	20,878	4,446
1930	76	21,507	4,565
1931	76	21,982	4,735
1932	76	22,135	4,936
1933	77	22,466	4,895
1934	77	22,799	5,035
1935	77	22,888	5,101
1936	77	22,564	5,183

* Includes figures for schools offering preclinical courses.

As shown in table 14, the total number of graduates was 5,183, an increase of eighty-two over the preceding session. With the exception of the slight decrease in the number of graduates in 1933, as compared with previous years, there has been a steady increase since 1926. As will be noted, there were marked increases

in 1923, 1924 and 1925. In the seventy-seven recognized medical schools in the United States during 1935-1936 there were 22,564 students, including those having an incomplete medical course, and 5,183 graduates.

In this connection it is interesting to note the number enrolled in the various classes in the United States for each session from 1930-1931 to 1935-1936 inclusive, as shown in table 15. The total attendance for the first year for the session 1935-1936 was 6,005, or 351 fewer than the number enrolled for the session 1934-1935, which in turn was 101 fewer than the number enrolled in 1933-1934. The total attendance for the remainder of the classes was, respectively, 5,458, 5,230, 5,020 and 1,213. The two medical schools of the University of Chicago are not operated under the promotion by class system but on an individual plan. It is not possible, therefore, to group them into the figures given. This is likewise true of the enrolment at Duke University. They are, however, included in the totals. There were 219 students enrolled at Duke, 311 at the School of Medicine of the Division of the Biological Sciences of the University of Chicago and 321 at Rush Medical College, a total of 851. There were 344 fewer students enrolled than in 1934-1935 and 770 more than were enrolled in 1930-1931. Only one new medical school has been opened since that session, namely, the Louisiana State University Medical Center, which had an enrolment of 315 for the session of 1935-1936. Excluding the students of this university, there were 455 more students enrolled during the college session just ended than in the seventy-six medical schools that existed in 1931. For the session 1935-1936 the freshman and sophomore enrolments decreased 351 and 166 respectively, while the junior and senior year enrolment was increased by 88 and 115 students respectively, exclusive of the figures for the three schools previously mentioned in this paragraph. The intern year decreased by twenty.

The Association of American Medical Colleges [3] reports that there were 34,427 applications for admission to the 1935 freshman class, representing 12,740 applicants, and of these 6,900 were accepted and 5,840 rejected. However, as already indicated 6,005 actually enrolled for the freshman year, exclusive of the University of Chicago and Duke University enrolment. It

TABLE 15.—*Students in the United States Shown by Classes—1930-1936*

	1st Year	2d Year	3d Year	4th Year	5th Year‡	Total
1930-1931	6,456	5,538	5,080	4,908	1,025	23,007
1931-1932	6,266*	5,462*	4,932*	4,885*	1,067	23,302
1932-1933	6,420*	5,479*	5,017*	4,948*	1,106	23,572
1933-1934	6,457†	5,571†	4,988†	4,967†	1,183	23,982
1934-1935	6,356†	5,624†	5,142†	4,905†	1,233	24,121
1935-1936	6,005†	5,458†	5,230†	5,020†	1,213	23,777

* Enrolment for the two medical schools of the University of Chicago not included.
† Enrolment for the two medical Schools of the University of Chicago and Duke University not included.
‡ Intern year.

may be noted that 895 were accepted by medical schools who did not enroll in a medical school in 1935-1936 because of multiple application. The College Association has ascertained from its survey that about 1 to 2 per cent of those accepted drop out within the first week or two.

NEGRO STUDENTS AND GRADUATES

Negro medical students for the session 1935-1936 are recorded by classes in table 16. Totals for the college sessions 1934-1935 are shown for comparison. There were 369 such students and seventy-three graduates, a decrease of thirty-three students and thirty-one graduates respectively. The only medical school strictly for Negro youth, Meharry Medical College, organized in 1876, matriculated 183 students and had thirty-two graduates. At Howard University College of Medicine, organized in 1869, they compose a majority of those

TABLE 16.—*Negro Students and Graduates*

Name of School	Enrolment by Classes During 1935-1936					
	1st Year	2d Year	3d Year	4th Year	Totals	Graduates
College of Medical Evangelists	..	2	2	1	5	..
Howard University College of Medicine	37	28	33	35	133	33
Loyola University School of Medicine	..	1	..	..	1	..
University of Chicago, Division of Biological Sciences	1	..	1	2	4	..
University of Illinois College of Medicine	1	1	1	1	4	..
Indiana University School of Medicine	..	1	..	2	3	2
University of Kansas School of Medicine	1	1	..	..	2	..
Boston University School of Medicine	1	1	..	..	2	..
Tufts College Medical School	..	..	1	..	1	..
Wayne University College of Medicine	4	1	..	..	5	..
University of Michigan Medical School	1	..	1	..	2	..
University of Nebraska College of Medicine	1	..	..	..	1	..
Columbia University College of Physicians and Surgeons	..	..	..	1	1	1
New York Medical College	..	..	1	1	2	1
University of Cincinnati College of Medicine	..	..	..	..	..	1
Western Reserve University School of Medicine	1	..	..	..	1	..
Ohio State University College of Medicine	1	2	2	1	6	1
Temple University School of Medicine	..	..	1	..	1	..
University of Pennsylvania School of Medicine	..	1	1	..	2	..
Woman's Medical College of Pennsylvania	..	1	..	..	1	..
Meharry Medical College	57	56	38	32	183	32
University of Vermont College of Medicine	..	1	..	..	1	..
University of Toronto Faculty of Medicine	1	..	..	..	1	..
McGill University Faculty of Medicine	..	1	1	2	6*	2
University of Montreal Faculty of Medicine	..	..	1	..	1	..
	107	98	84	78	369	73
Totals during 1934-1935	125	90	80	107	402	104

* Includes fifth year enrolment of two.

in attendance and for the session 1935-1936, 133 students of a class of 142 and thirty-three of the thirty-five graduates were Negroes. These two schools graduated the majority of the Negro students. All other schools graduated a total of eight. In twenty schools in the United States, forty-five Negro students were enrolled and six were graduated. There were eight Negro students in three Canadian schools and in one there were two graduates. The enrolment by classes in all schools was first year 107, second year 98, third year 84 and fourth year 78, a total of 369. In 1934-1935 corresponding figures were 125, 90, 80 and 107, a total of 402. In 1935 there were 104 graduates and this session only 73.

FEES

In table 17 the eighty-seven medical schools of the United States and Canada have been grouped according to the tuition fees charged. To arrive at the figures listed, an average was computed of the fees for each school. Included in these fees are the various minor charges, such as for matriculation, breakage, diploma and graduation. Four schools have fees of less than $100. These were Louisiana State University, University of North Dakota, University of Oklahoma and the University of Texas. The first three schools named, however, charge an additional fee of $300, $85 and $200 for nonresidents. The University of Texas does not accept nonresidents. The eleven schools having

3. J. A. Am. M. Coll. 11: 185 (May) 1936.

V 107
1936

fees over $500 are Yale, George Washington, Johns Hopkins, Columbia, Cornell, Long Island College, New York Medical College, New York University, Syracuse, Buffalo and the University of Pennsylvania. Thirty-one schools in the United States and three in Canada made an additional yearly charge for nonresidents ranging from $50 by the Universities of Mississippi, Missouri, Nebraska, Cincinnati (nonresidents of Cincinnati) and Virginia to $300 exacted by the University of California and Louisiana State University.

The lowest nonresident fee was charged by the University of Kansas ($43 for the first year, $62 for the second year and $88 for the third and fourth years). No noticeable increase or decrease has been noted in the fees charged by medical schools, there being four in the group having less than a $100 a year fee, one more than during 1934-1935; ten had fees ranging from $100 to $200, one less than the previous college session; the number in the group between $200 and $300 remained the same (twenty-six); fifteen charged between $300 to $400 a year, while in 1934-1935 there were sixteen in this group; from $400 to $500 there were twenty-one, also in last session, and in the last group, $500 or over, there were eleven schools, one more than in 1934-1935. The fees are not listed in these statistics by individual schools other than in the descriptions beginning on page 686. Provision is made

TABLE 17.—*Fees, 1935-1936—United States and Canada* *

	Schools
Under $100	4
$100 to $200	10
200 to 300	26
300 to 400	15
400 to 500	21
500 or over	11
Total	87

*Based on fees charged resident students.

also by most schools for scholarships and loan funds for deserving students. The average fee charged by all schools was $329.

INSTRUCTION IN MEDICAL SCHOOLS REGARDING ORGANIZED MEDICINE

Resolutions were presented for official consideration to the House of Delegates at the recent session in Kansas City by the medical societies of Arkansas and Ohio through the Board of Trustees of the Association reading in substance as follows:

WHEREAS, It has been noted with disappointment that some of the graduates of medical schools and colleges in recent years apparently are unfamiliar with the objectives and activities of organized medicine and lack a clear understanding of the benefits to be derived through membership in local, state and national medical societies; be it

Resolved, By the House of Delegates of the Ohio State Medical Association, Oct. 2-4, 1935, that the administrative officials of all accredited American medical colleges be respectfully requested to provide instruction for senior students on the activities, services and benefits of organized medicine; be it further

Resolved, That a resolution be transmitted to the dean of each of the accredited medical colleges of America, the Council on Medical Education and Hospitals and the Board of Trustees of the American Medical Association, and the secretary of each constituent state medical society.

The Reference Committee on Reports of Board of Trustees and Secretary, to which this resolution was referred, endorsed the request of the Board of Trustees in presenting the resolutions for consideration. They are reproduced in this issue, as it contains a summary of events of the year. It is to be hoped that graduates can in some way be made familiar with the objectives and activities of organized medicine.

CITIZENS OF THE UNITED STATES ENROLLED IN MEDICAL FACULTIES ABROAD

A study of the number of citizens of the United States enrolled in medical faculties abroad will be found in table 18. This tabulation covers the academic year

TABLE 18.—*Citizens of the United States Enrolled in Medical Faculties Abroad*

	Totals		Students, Academic Year, 1935-1936	
			Enrolled	Completed Course
Austria	**248**	**11**		
Karl-Franzens-Universität, Graz			10	0
Leopold-Franzens-Universität, Innsbruck			7	3
Medizinische Fakultät der Universität Wien			231*	8*
Belgium	**8**	**3**		
Université Libre de Bruxelles			4	1
Université Catholique de Louvain			4	2
Brazil	**1**	**0**		
Faculdade de Medicina do Parana, Curitiba			1	0
China	**12**	**1**		
Pennsylvania Medical School, Shanghai			12	1
Czechoslovakia	**7**	**2**		
Univerzita Komenského, Bratislava			4	1
Deutsche Universität, Prague			3	1
England	**54**	**30**		
University of Birmingham			3	2
University of Bristol			5	0
University of Durham, Newcastle-upon-Tyne			3	2
University of Liverpool			1	0
University of London				
Charing Cross Hospital Medical School			7	2
King's College Hospital Medical School			7	6
Middlesex Hospital Medical School			1	1
London (Royal Free Hospital) School of Medicine for Women			1	0
St. Bartholomew's Hospital Medical College			11	2
St. George's Hospital Medical School			5	4
St. Mary's Hospital Medical School			0	8
Westminster Hospital Medical School			0	2
University of Oxford			2	0
University of Sheffield			8	1
France	**69**	**3**		
Université de Lyon			4	1
Université de Nancy			2	0
Université de Paris			63*	2*
Germany	**197**	**23**		
Friedrich-Wilhelms-Universität, Berlin			62*	13*
Rheinische Friedrich-Wilhelms-Universität, Bonn			27	2
Schlesische-Friedrich-Wilhelms-Universität, Breslau			1	0
Friedrich-Alexanders-Universität, Erlangen			1	0
Johann Wolfgang Goethe Universität, Frankfurt-am-Main			10	1
Albert-Ludwigs-Universität, Freiburg			9	3
Hessische Ludwigs-Universität, Giessen			1	0
Vereinigten Friedrich-Universität, Halle-Wittenberg			3	0
Universität Köln			7	0
Albertus-Universität, Königsberg			4	0
Universität Leipzig			33*	1*
Philipps-Universität, Marburg			3	0
Ludwig-Maximilians-Universität, München			32	2
Eberhard-Karls-Universität, Tübingen			4	1
Hungary	**9**	**0**		
Magyar Királyi Erzsébet Tudományegyetem, Pecs			4	0
Magyar Királyi Ferencz József Tudományegyetem, Szeged			5	0
Ireland	**7**	**4**		
University of Dublin School of Physic			7	4
Italy	**230**	**44**		
Regia Università di Firenze			4	0
Regia Università di Messina			6	0
Regia Università di Modena			2	0
Regia Università di Napoli			83**	4**
Regia Università di Pavia			3	0
Regia Università di Perugia			4	2
Regia Università di Roma			128	38
Lithuania	**2**	**0**		
Vytauto Didžiojo Universiteto, Kaunas			2	0
Poland	**5**	**0**		
Uniwersytet Poznański			3	0
Uniwersytet Jozefa Pilsudskiego, Warszawa			2	0
Scotland	**354**	**49**		
University of Aberdeen			2	1
School of Medicine of the Royal Colleges, Edinburgh			207	20
University of Edinburgh			24	7
Anderson College of Medicine, Glasgow			43	7
St. Mungo's College Medical School, Glasgow			55**	0**
University of Glasgow			13	5
University of St. Andrews, (St. Andrews)			10	9
Switzerland	**293**	**69**		
Universität Basel			87	8
Universität Bern			98	30
Université de Geneve			43*	11*
Universität Zürich			65	20
Syria	**15**	**3**		
American University of Beirut			15	3
Yugoslavia	**6**	**0**		
Beogradskog Universiteta			6	0
Totals by countries	**1,517**	**242**		

* 1934-1935 figures.
** 1933-1934 figures.

1935-1936. In a few cases because figures were not available it was necessary to reproduce figures from previous sessions for several schools known to have large numbers of citizens of the United States enrolled. Including these figures there were 1,517 students and 242 graduates or those who completed their medical training in sixty-six schools. This study has been carried on since 1931, when it became evident that great numbers of Americans were going to Europe to study. The files of the Association of American Medical Colleges indicate that the application record of many of these students show that they have made application to medical schools in the United States without success. A study has also been conducted of the license record of foreign physicians.[4] The following tabulation (representing both American and foreign born physicians) of the number examined in six years and the percentage failing is of interest:

	Number Examined	Passed	Percentage Failed
1930	167	92	44.9
1931	158	91	42.4
1932	182	96	47.3
1933	200	129	35.5
1934	285	170	40.2
1935	437	302	30.9

In addition to the figures given, a number are periodically licensed in New York without examination—by endorsement of their foreign credentials, which are equivalent to licensure in this country. In 1935, sixty-nine were so registered in New York.

TABLE 19.—*Citizens of the United States Reported Enrolled in Medical Faculties Abroad—1930-1936*

	Students 1930-1931		Students 1931-1932		Students 1932-1933		Students 1933-1934		Students 1934-1935		Students 1935-1936	
	Enrolled	Completed Course	Enrolled	Completed Course	Enrolled	Completed Course	Enrolled	Completed Course	Enrolled	Completed Course	Enrolled	Completed Course
Austria	114	3	175	6	271	3	272	4	233	11	248	11
Belgium	3	0	4	1	10	1	11	0	19	3	8	3
Brazil	..	..	..	..	..	..	2	1	1	0	..	0
China	..	..	..	..	12	0	15	0	18	1	12	1
Colombia	..	..	..	..	..	..	1	0	..	..	..	..
Czechoslovakia	2	0	4	0	19	0	2	0	10	0	7	2
Dominican Republic	..	..	..	..	..	..	..	..	1	0	..	..
England	52	2	61	4	57	1	69	4	78	21	54	30
Finland	1	0	..	..	..	..	..	..	..	..	..	..
France	25	2	62	6	78	5	86	2	80	3	69	3
Germany	72	1	189	5	439	42	331	8	246	25	197	23
Greece	..	..	..	..	4	1	6	0	..	..	..	..
Hungary	9	1	15	2	13	1	25	1	23	0	9	0
Ireland	14	1	21	0	20	0	4	1	6	1	7	4
Italy	78	11	153	4	282	14	232	21	288	33	230	44
Japan	..	..	1	0	..	..	..	..	..	..	..	..
Lithuania	..	..	4	0	4	0	2	0	2	0	2	0
Mexico	1	0	1	1	..	..	..	..	..	..	..	..
Netherland India	..	..	..	..	1	0	1	0	1	0	..	..
Netherlands	..	..	..	..	..	..	1	0	..	..	..	..
Philippine Islands	..	..	..	..	2	0	2	0	7	0	..	..
Poland	2	0	3	0	9	0	14	4	12	1	5	..
Portugal	..	..	..	..	..	..	1	0	1	0	..	..
Scotland	256	19	283	25	416	9	474	48	476	71	354	49
South Africa, Union of	..	..	1	0	..	..	..	..	..	..	..	..
Spain	..	..	..	..	..	..	..	..	63	24	..	..
Switzerland	65	4	214	1	405	10	351	8	352	52	293	69
Syria	16	2	8	0	7	0	11	2	13	2	15	3
Yugoslavia	..	..	2	1	3	1	7	0	11	0	6	0
Totals	710	46	1,201	56	2,054	88	1,940	104	1,961	248	1,517	242

The increase in the number examined in 1935 represent mostly the Americans who began the study of medicine in 1930. In 1933 the Federation of State Medical Boards adopted a resolution to the effect that no student matriculating in a European medical school subsequent to the academic year of 1932-1933 will be admitted to any state medical licensing examination who does not present satisfactory evidence of premedical education equivalent to the requirements of the Association of American Medical Colleges and the Council on Medical Education and Hospitals, and graduation from a European medical school after four academic years of attendance, and further submits evidence of having satisfactorily passed the examination to obtain a license to practice medicine in the country in which the medical school from which he is graduated is located. This policy of the federation has been made effective by individual action on the part of some of the state licensing bodies and the National Board of Medical Examiners.

Two years ago the governments of several European countries sent representatives to this country to discuss appropriate standards for students from the United States. Through conferences with the officers of the Council and of the Association of American Medical Colleges a much better understanding of the problem was gained.

The enrolment of students in foreign faculties as reported for each session since 1930-1931 is shown in table 19. The largest numbers were enrolled in Austria, Germany, Italy, Scotland and Switzerland. Those enrolled in 1930-1931 will for the greater part finish or have finished their courses this year and are already presenting a problem to hospitals where they are applying for internships and to state boards for licensure. To assist hospitals, as well as to safeguard them, the Council in February 1936 passed the following resolution:

Resolved, That when suitable graduates of class A schools of the United States and Canada are not available, hospitals approved for intern training may accept graduates of European schools who have passed parts I and II of the examinations of the National Board of Medical Examiners.

Furthermore, the House of Delegates of the American Medical Association adopted the following resolutions at its recent meeting in Kansas City:

WHEREAS, Through the initiation, support and watchfulness of organized medicine, standards of medical education and medical practice have rapidly and continuously advanced; and

WHEREAS, There is a serious danger of this most satisfactory state of progress being undermined, and weakened by the registration to practice of graduates of medical schools of foreign countries; and

WHEREAS, There are at the present time more than 1,500 American students attending medical schools in foreign countries, many of them not having satisfactory credentials for admission to American medical schools; and

WHEREAS, There is in the files of the Council on Medical Education and Hospitals of the American Medical Association, and the Federation of State Medical Boards, evidence that many of the foreign medical schools do not consistently maintain and enforce the same high standards as are maintained in the medical schools of the United States; therefore be it

Resolved, That each applicant for medical license in the United States, in order to adjust this inequality and to show a knowledge of acceptable medical practice, should be required before being admitted to a written examination before a properly constituted examining board to hold a license to practice in the country of his graduation and a certificate that he has completed a year's work as an intern in a hospital approved for internship training or should complete the fourth year in an American class A medical college; and be it further

Resolved, That the House of Delegates of the American Medical Association approve the foregoing and that a copy be sent to the properly constituted officers of each examining board of the United States and to the Federation of State Medical Boards, with the request that they consider seriously urgent need for the adoption of such rules and/or legislation necessary to put the purposes of these resolutions into effect.

It is to be hoped that licensing boards will more uniformly adopt measures to ensure that foreign graduates will be admitted to the licensing examination on the basis of a professional training which is not inferior to that required in the United States.

4. J. A. M. A. **106**: 1489 (April 25) 1936.

V 107 1936

TABLE 20.—*Graduate Medical Instruction by Universities in the United States and Canada, 1935-1936* *

Medical Schools	Type of Instruction Offered			
	Organized Courses	Residencies, Fellowships, Etc.	Extension Teaching	Graduate School Students Under Direction of Medical School Faculty
University of Alabama	0	+	0	+
University of Arkansas	0	0	0	0
University of California	0	+	+	+
College of Medical Evangelists	0	Residencies	0	0
University of Southern California	+	+	+	+
Stanford University	0	+	0	+
University of Colorado	+	+	0	+
Yale University	+	+	0	+
Georgetown University	..	+	0	+
George Washington University	0	+	0	+
Howard University	0	0	0	+
Emory University	..	+	+	+
University of Georgia	+	+	+	+
Loyola University	0	..	0	+
Northwestern University	+	+	0	+
Rush Medical College	Otolaryngology, Ophthalmology and Radiology	+	0	0
Division of the Biological Sciences	0	..	0	+
University of Illinois	+	+	+	+
Indiana University	+	+	0	+
State University of Iowa	Orthopedic Surgery	Residencies	+	+
University of Kansas	+	+	+	+
University of Louisville	0	+	0	+
Louisiana State University	0	0	0	+
Tulane University of Louisiana	+	+	+	+
Johns Hopkins University	0	+	0	+
University of Maryland	0	+	+	+
Boston University	0	..	..	+
Harvard University	+	+	0	+
Tufts College	0	+	..	0
University of Michigan	Medicine	Lectures, Clinics and Demonstrations	+	+
Wayne University	0	0	0	+
University of Minnesota	Graduate School of Medicine	+	+	0
University of Mississippi	0	..	0	0
University of Missouri	..	..	..	+
St. Louis University	+	+	0	+
Washington University	+	+	0	+
Creighton University	0	Graduate Assistantship	0	+
University of Nebraska	0	0	0	+
Dartmouth Medical School	0	..	..	..
Albany Medical College	0	+	0	0
Long Island College	+	+	0	..
University of Buffalo	+	+	+	+
Cornell University	0	+	0	+
Columbia University	+	+	+	+
New York Medical College	+	0	0	..
New York University	+	+	0	+
University of Rochester	Ophthalmology	+	+	+
Syracuse University	0	+	0	+
University of North Carolina	0	0	0	+
Duke University	0	+	0	+
Wake Forest College	0	..	..	..
University of North Dakota	0	+	0	+
University of Cincinnati	0	+	0	+
Western Reserve University	0	+	0	+
Ohio State University	0	+	+	+
University of Oklahoma	+	0	0	+
University of Oregon	0	+	0	+
Hahnemann Medical College	0	0	0	0
Jefferson Medical College	0	0	..	..
Temple University	0	+	0	0
University of Pennsylvania	Graduate School of Medicine	+	+	+
Woman's Medical College	0	+	0	0
University of Pittsburgh	0	0	0	0
Medical College of South Carolina	0	Residencies	0	0
University of South Dakota	0	..	0	+
University of Tennessee	0	..	0	+
Meharry Medical College	0	0	0	0
Vanderbilt University	+	+	0	+
Baylor University	0	0	0	..
University of Texas	0	Residencies	0	0
University of Utah	0	..	0	..
University of Vermont	0	..	0	+
University of Virginia	0	+	0	+
Medical College of Virginia	+	+	0	+
West Virginia University	0	0	0	+
University of Wisconsin	0	+	+	+
Marquette University	Basic Medical Sciences	0	0	+
University of Alberta	0	0	0	..
University of Manitoba	0	0	0	0
Dalhousie University	+	0	+	..
Queen's University	0	+	+	0
University of Western Ontario	+	+	+	+
University of Toronto	+	+	+	+
McGill University	0	+	0	+
University of Montreal	0	+	0	0
Laval University	0	0	0	..
University of Saskatchewan	0	..	0	..

* Institutions offering graduate medical courses other than universities are not included in this tabulation.
+, yes; .., no reply; 0, no.

GRADUATE MEDICAL EDUCATION

Table 20 contains information regarding opportunities for graduate medical education by universities in the United States and Canada elicited from an inquiry as to whether (1) definitely organized courses for graduates were being offered; (2) graduate training was being conducted in an informal way, i. e., by residencies, fellowships, and the like; (3) the institutions engage in extension teaching in the field of medicine, and (4) students enrolled in the graduate school as candidates for advanced (nonmedical) degrees are permitted to do part of their work under the direction of the medical faculty. Twenty-eight schools report that they have organized courses and two universities have graduate schools of medicine. Fifty-seven offer residencies or fellowships. Extension teaching is given by twenty-three institutions and courses offered in the graduate school under the direction of the medical faculty are reported by fifty-nine universities.

Fourteen schools report that none of these types of instruction are offered, while thirteen have all four forms of graduate instruction.

This table does not include institutions such as the New York Polyclinic and the New York Eye and Ear Infirmary, which are not affiliated with universities. The Council will make a study of graduate medical education as soon as the results of the survey of undergraduate medical schools have been analyzed.

SURVEY OF SCHOOLS FOR PHYSICAL THERAPY TECHNICIANS

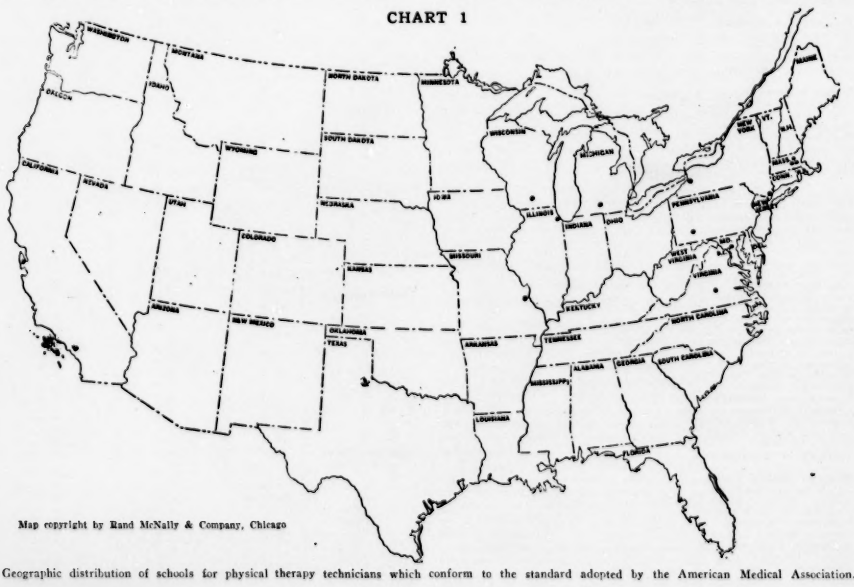
In order that physicians might have some reliable source of information concerning the efficiency of devices for applying physical agents therapeutically, the House of Delegates in 1925 created the Council on Physical Therapy. The Council adopted nomenclature, definitions and minimum standards for apparatus which have resulted in raising the quality of advertising material directed to the profession and to the public. During its ten years of existence, less scrupulous manufacturers have been effectively curbed in their campaigns to "educate physicians" and thus promote sales of expensive therapy machines of unproved worth.

The profession has been enlightened concerning the true value of physical therapy, which lies principally in the proper application of exercise, heat and massage.

Physicians generally are better informed as to the indications for and the effects of the various forms of physical therapy. The need for assistants well trained in the technic of its application has become increasingly apparent.

At the Cleveland session of the American Medical Association in 1934, Dr. C. B. Reed, Illinois, presented the following resolution, which was referred to the Board of Trustees for appropriate action:

CHART 1



Map copyright by Rand McNally & Company, Chicago

Geographic distribution of schools for physical therapy technicians which conform to the standard adopted by the American Medical Association.

WHEREAS, There is a recognized demand for qualified professionally trained physical therapy technicians in the hospitals, clinics, physicians' offices and schools for crippled children of this country; and

WHEREAS, The work of these technicians is under the direction of members of the medical profession; and

WHEREAS, The medical profession and the American Physiotherapy Association recognize the vital importance of establishing minimum standards of training and the inspection of training schools in physical therapy by a qualified and authoritative organization; therefore be it

Resolved, That the entire subject be left to the Board of Trustees of the American Medical Association, with the request that it be given careful study and consideration, and, if practical and feasible, some

V 107
1936

plan for the establishment of standards, ratings and inspections of training schools in physical therapy be effected, providing that the expense of such inspection be borne by the school requesting the same.

The Board of Trustees designated the Council on Medical Education and Hospitals as the proper body to proceed in making such a survey. Inspections of thirty-five schools for physical therapy technicians were made in connection with the regular field work of the Council's staff. Complete information was secured regarding the organization, faculty, prerequisites, curriculum, physical plant, records and affiliations for each school.

In an analysis of the inspection reports the following items were of special interest:

1. *Directors of Schools.*—In twenty-four schools the directors were doctors of medicine, and in the remainder academic teachers, registered nurses or physical education instructors.

2. *Prerequisite for Admission.*—Thirteen schools placed their requirement at high school graduation. However, seven of these were regular college courses. In eight schools there was no minimum educational requirement; these represented mainly schools of the commercial type. Candidates having two years of physical education are admitted to four courses of training, and three schools limit their students to registered nurses.

3. *Duration.*—The duration of the training varies greatly, from a few weeks in some schools to eighteen months in others. In seven instances the courses conducted by a university or college require four years. Seven schools conduct twelve-month courses of training; ten schools have nine-month courses; ten schools have less than nine-month courses; and one school has courses of nine, twelve and eighteen months.

4. *Affiliations.*—Affiliations for practice training exist in connection with twenty schools. General hospitals are used mainly, with special hospitals, clinics and institutions of various types in use in many instances. Fifteen of the schools have no affiliations to provide clinical material for practice training; in these schools the students either practice on one another or have no practical training at all.

5. *Number of Students.*—The enrolment varies from one to twelve in thirty-two schools, the average being approximately six students. Three commercial schools reported attendances of twenty-five, fifty and one hundred students.

6. *Tuition.*—Fees vary extensively. The average fee lies between $100 and $200 for nine and twelve month courses. Six schools require tuition fees of $300 and one of $400.

7. *Certification.*—On satisfactory completion of the course of training, each school endorses the graduate by means of a letter of recommendation, certificate, diploma or degree, as the case may be.

The cooperation of the Council on Physical Therapy, the American Congress of Physical Therapy and the American Physiotherapy Association was secured in determining minimum education requirements for physical therapy technicians. The following "Essentials of an Acceptable School for Physical Therapy Technicians" were adopted by the Council on Medical Education and Hospitals and passed by the House of Delegates of the American Medical Association at the Kansas City meeting, May 9, 1936:

ESSENTIALS OF AN ACCEPTABLE SCHOOL FOR PHYSICAL THERAPY TECHNICIANS

I. Organization

1. A school for physical therapy technicians should be incorporated as or under a nonprofit institution. Its board of trustees should be composed of public spirited men or women having no financial interest in the operations of the school. The trustees should serve for fairly long and overlapping terms. If the choice of trustees is vested in any other body than the board itself, that fact should be clearly stated. Officers and faculty of the school should be appointed by the board.

2. Affiliation with a college, university or medical school is highly desirable but is not an absolute requirement.

II. Faculty

3. The school should have a competent teaching staff, graded and organized by departments. Appointments should be based on thorough education and training and successful teaching experience. Nominations for faculty positions should be made in accordance with academic custom. The staff should include not less than one qualified salaried instructor and in each institution where practical training is carried on not less than one qualified physical therapist. The question of full time and part time appointments is not as important as the qualifications of the instructors, who should be specialists or exceptionally well trained and well qualified in the lines they are teaching.

III. Plant

4. The school should own, or enjoy the use of, buildings sufficient in size to provide adequate lecture rooms, class laboratories and administration offices. Adequate equipment should include anatomic charts, manikins, models, stereopticons and other aids to effective teaching. It is suggested that dissecting materials should be provided to enable each student to dissect or have the benefit of demonstration of dissection of at least the lateral half of the human cadaver. Skeletons and disarticulated bones should be supplied. There should be a library receiving regularly all the scientific periodicals pertaining to physical therapy, current numbers of which should be easily accessible to the students.

IV. Clinical Facilities

5. Provision should be made for each student to receive practice training adequate in kind and amount under competent supervision in physical therapy in a hospital or other institution acceptable to the Council on Medical Education and Hospitals of the American Medical Association.

V. Resources

6. Experience has shown that a modern school of physical therapy cannot as a rule be maintained by the income from students' fees. No physical therapy school, therefore, should expect to secure approval which does not have a substantial income in addition to students' fees.

VI. Administration

7. There should be careful and intelligent supervision of the entire school by an executive officer who, by training and experience, is fitted to interpret the prevailing standards in physical therapy education, and who is clothed with sufficient authority to carry them into effect.

8. There should be satisfactory records, showing conveniently and in detail the credentials, attendance, grades and accounts of the students, by means of which an exact knowledge can be obtained regarding each student's work. Except for good cause, such as for illness, no credit should be given for any course when the attendance has been less than 90 per cent of the full time.

VII. Requirements for Admission

9. Candidates for admission should be able to satisfy one of the following requirements:

(*a*) Two years or sixty semester hours of college, including courses in physics and biology.
(*b*) Graduation from an accredited school of nursing.
(*c*) Graduation from an accredited school of physical education.

Courses in general physics, chemistry and biology are highly recommended for all who seek to enter training in physical therapy.

10. The admission of students to the physical therapy school must be in the hands of a responsible committee or examiner, whose records shall always be open for inspection. Documentary evidence of the student's preliminary education should be obtained and kept on file. When the physical therapy school is an integral part of the university, this work usually devolves on the university examiner.

11. Advanced standing may be granted to students for work done in other acceptable physical therapy schools or hospital departments, provided the entrance requirements and other essentials herein set forth have been complied with. Official

verification of the student's previous physical therapy work should be obtained by direct correspondence with the schools previously attended, and his preliminary qualifications should also be verified and recorded the same as for first-year students.

12. Complete physical examination of each student admitted should be conducted under the auspices of the school.

VIII. Publications

13. The school should issue, at least annually, a bulletin setting forth the character of the work which it offers. Such announcement should contain a list of the members of the faculty with their respective qualifications.

Suggested electives: asepsis, bandaging, first aid, history of physical therapy, hygiene, joint measurements, office routine, occupational therapy, records, social service.

All subjects should be taught by qualified teachers.

Length of course: Not less than nine months.

According to the foregoing standard the following schools have been found to comply. Several others are now in the process of making the necessary changes to fulfil the requirements.

The list of schools approved for physical therapy technicians will be maintained as a permanent part of the Council's work and revisions will be made from time to time. New schools will be considered for approval on application to the secretary of the Council on Medical Education and Hospitals of the American Medical Association.

The American Congress on Physical Therapy, organized in 1921, has done a great deal to advance the scientific knowledge of the specialty. In 1935, with the aid of the Council on Medical Education and Hospitals, the congress established the American Registry of Physical Therapy Technicians. The objects of the Registry among others are:

"To maintain the minimum standards of educational and technical qualifications as given by the Council on Medical Education and Hospitals of the American

Schools for Physical Therapy Technicians Conforming to the Standard Adopted by the American Medical Association in 1936

School	Director	Prerequisite for Admission	Length of Course	Student Capacity	Tuition	Certificate, Diploma, Degree
Children's Hospital, Los Angeles [1]	Miss L. H. Graham, R.N.	(a) R.N. (b) Grad. phys. ed.	12 mos.	6	$125	Diploma
Stanford University Hospitals, San Francisco	H. L. Langnecker, M.D.	(a) R.N. (b) Grad. phys. ed.	12 mos.	9	$175-$250	Certificate
Walter Reed General Hospital, Washington, D.C. [2]	Maj. W. W. McCaw, M.D.	Grad. phys. ed.	12 mos.	10	None	Certificate
Northwestern University Medical School, Chicago [3]	J. S. Coulter, M.D.	(a) R.N. (b) Grad. phys. ed.	9 mos.	12	$200	Certificate
Bouvé-Boston School of Physical Education, Boston [4 a]	Miss C. K. Greene, P.T., in charge	Grad. high school	3 and 4 yrs.	10	$400 per yr.	Diploma (3 yrs.) B.S. (4 yrs.)
Harvard Medical School, Course 445, Boston [5]	F. R. Ober, M.D.	(a) R.N. (b) Grad. phys. ed.	9 mos.	16	$150	Certificate
Boston University, Sargent College of Physical Education, Cambridge, Mass. [6]	Prof. E. Hermann, Dean	Grad. high school	4 yrs.	29	$365 per yr.	B.S.
Battle Creek College, Battle Creek, Mich. [7]	Paul Roth, M.D.	(a) R.N. (b) Grad. phys. ed.	12 mos.	..	$180 per yr.	B.S.
St. Louis University School of Nursing, St. Louis [8]	A. J. Kotkis, M.D.	Grad. high school	4 yrs.	6	$200 per yr.	B.S.
University of Buffalo, Buffalo [9]	G. G. Martin, M.D.	R.N.	18 mos.	6	$10 per univ. credit	B.S.
D. T. Watson School of Physiotherapy, Leetsdale, Pa. [10] (affiliated with the Univ. of Pittsburgh School of Medicine)	Jessie Wright, M.D.	(a) Grad. phys. ed. (b) 2 yrs. premed.	22 mos.	8	None	Diploma
College of William and Mary, Richmond, Va. [11]	Thomas Wheeldon, M.D.	(a) R.N. (b) Grad. phys. ed.	9 mos.	6	Coll. fee	Certificate
University of Wisconsin, Madison, Wis. [12 b]	E. A. Pohle, M.D.	(a) R.N. (b) Grad. phys. ed.	12 mos.	20	Univ. fee	Certificate

Notes

a. Four year course leads to B.S. degree from Simmons College.
b. M.S. degree for advanced work.

Affiliated Clinical Facilities

1. Cedars of Lebanon Hospital, Good Hope Clinic and Los Angeles County Hospital, Los Angeles, and Glendale Sanitarium and Hospital, Glendale.
2. Weightmann School for Crippled Children, Washington, D. C.
3. Illinois Central Hospital, Michael Reese Hospital, Montgomery Ward Medical Clinics, Passavant Memorial Hospital and St. Luke's Hospital, Chicago.
4. Boston City Hospital, Children's Hospital, Massachusetts General Hospital and Robert Breck Brigham Hospital, Boston; Cambridge Hospital, Cambridge, and New England Peabody Home for Crippled Children and Newton Hospital, Newton.
5. Boston Home for Incurables, Convalescent Home of the Children's Hospital, Children's Hospital, Harvard Infantile Paralysis Commission, Industrial School for Crippled and Deformed Children, Massachusetts General Hospital, Perkins Institute for the Blind and Robert Breck Brigham Hospital, Boston, and Cambridge Hospital, Cambridge.
6. Massachusetts General Hospital, Massachusetts Memorial Hospitals and Industrial School for Crippled and Deformed Children, Boston, and Cambridge Hospital, Cambridge.
7. Ann J. Kellogg School and Battle Creek Sanitarium, Battle Creek.
8. Firmin Desloge Hospital, St. Louis.
9. Buffalo City Hospital, Buffalo.
10. Allegheny General Hospital, Children's Hospital, Falk Clinic, Industrial Home for Crippled Children and St. Francis Hospital, Pittsburgh.
11. Sheltering Arms Hospital and Stuart Circle Hospital, Richmond.
12. State of Wisconsin General Hospital, Madison.

IX. Minimum Curriculum

Subjects	Hours Theory	Hours Laboratory and Practice Training
Anatomy (including applied anatomy, demonstration on cadaver and lecture)	210	...
Clinical practice	...	400
Electrotherapy	30	45
Ethics and administration	5	..
Hydrotherapy	5	15
Massage	15	45
Pathology	30	..
Physiology	30	45
Principles of physical therapy as applied to:		
Medicine	15	30
Neurology	10	15
Orthopedics	15	30
Surgery (including surgical observation)	15	30
Psychology	15	..
Therapeutic exercise	30	75
Electives	45	..
	470	730
Total	1,200 hours	

V 107 1936

Medical Association for technicians administering physical therapy in hospitals, clinics and physicians' offices.

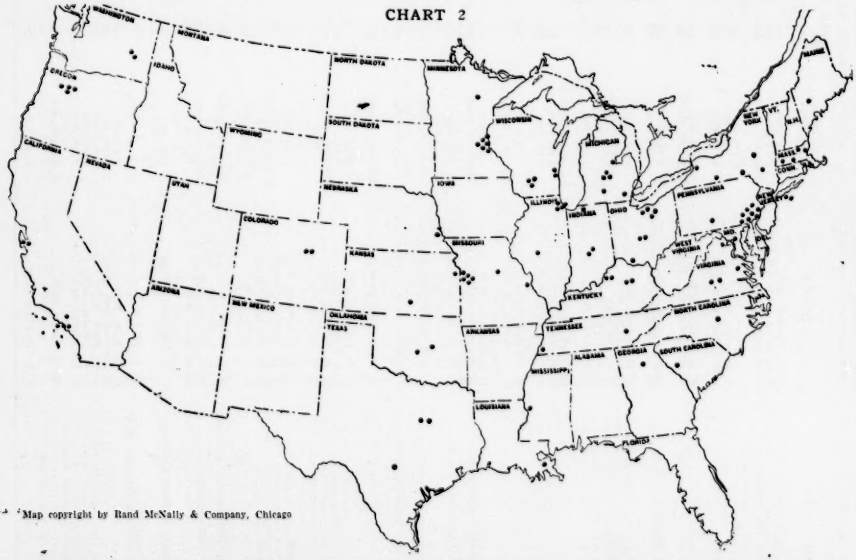
"To cooperate with the Council on Medical Education and Hospitals of the American Medical Association in its investigation, classification and periodic inspection of schools which conduct training courses for physical therapy technicians."

The American Registry of Physical Therapy Technicians has indicated that graduates from schools approved by the Council on Medical Education and Hospitals will be admitted to its examinations. The offices of the American Registry of Physical Therapy Technicians are at 30 North Michigan Avenue, Chicago, and the registrar is Miss Marion G. Smith.

SURVEY OF SCHOOLS FOR CLINICAL LABORATORY TECHNICIANS

The first serious effort made to elevate the standards of education for clinical laboratory technicians was made in 1928, when the American Society of Clinical Pathologists established its Board of Registry. At first, admission to the Registry was based on credentials and recommendations. In 1933 a more accurate system of identifying those qualified for registration was instituted by placing in operation the examination system.

CHART 2



Map copyright by Rand McNally & Company, Chicago

Geographic distribution of schools for clinical laboratory technicians which conform to the standard adopted by the American Medical Association.

At the same time the board made a questionnaire survey of schools for laboratory technicians and set up a minimum standard for approved schools. The first list of schools published under the Board of Registry appeared in 1933.

Since the beginning of the Registry there has existed an active cooperation between the Board of Registry and the Council on Medical Education and Hospitals. Realizing the need for inspection of schools seeking approval, the board in 1933 informally requested the aid of the Council in making such inspections in connection with its regular hospital survey work. Since the Council considered this training as a special type of medical education definitely related to the improvement of hospital standards, it decided to make a comprehensive survey of the situation.

One hundred and ninety-six schools have been visited by members of the Council staff. They are of three general types:

1. *The College or University Course.*—Instruction in these courses is based on regular standard entrance requirements of the particular college or university and credits are exchangeable with other schools of the same standing. The fourth year is usually given over to instruction and practice training in a hospital laboratory department affiliated with the educational institution. As a rule, on completion of the fourth year, a Bachelor of Science Degree in Medical Technology is conferred. Several schools continue throughout the four years with didactic training incorporating such courses as bacteriology, clinical microscopy, organic chemistry, physiologic chemistry, and physiology, in lieu of a year of practice training in a hospital laboratory.

2. *Hospital Laboratory Departments Offering Courses on the Apprenticeship Basis.*—This group is by far the largest. Students are admitted on one, two, three

(Continued on page 682)

Schools for Clinical Laboratory Technicians Conforming to the Standard Adopted by the American Medical Association in 1936

	Name and Location of School	Director	Entrance Requirement	Hospital Bed Capacity	Occupancy	Staff	Duration of Course	Number of Students	Tuition	Certificate Diploma Degree	
	CALIFORNIA										
1	Children's Hospital, Los Angeles	C. M. Hyland, M.D.	Coll. grad.	180	129	4	12 mos.	3	None	None	1
2	Los Angeles County Hospital, Los Angeles	N. G. Evans, M.D.	Coll. grad.	3,266	2,287	12	12 mos.	8	$50	Certificate	2
3	Mount St. Mary's College [a] (St. Vincent's Hospital), Los Angeles	E. M. Butt, M.D.	High sch. grad.	200	118	Dir. and coll. fac.	4 yrs.	..	$600 yr. inc. board	B.S.	3
4	Huntington Memorial Hospital, Pasadena	A. G. Foord, M.D.	2 yrs. coll.	186	94	6	12 mos.	3	None	Certificate	4
5	Mary's Help Hospital, San Francisco	Z. E. Bolin, M.D.	2 yrs. coll.	120	86	3	18 mos.	2	None	None	5
6	University of California Hospital, San Francisco	I. C. Schumacher, M.D.	2 yrs. coll.	264	182	6	16 mos.	4	None	None	6
	COLORADO										
7	Children's Hospital, Denver	E. I. Dobos, M.D.	2 yrs. coll.	250	114	4	12 mos.	1	None	Certificate	7
8	University of Denver, Denver [a] [1]	Philip Hillkowitz, M.D.	High sch. grad.	795	490	16	4 yrs.	21	$225 yr.	B.S.	8
	GEORGIA										
9	Emory University [b] (Emory University Hospital), Emory University	Roy R. Kracke, M.D.	B.S.	225	85	8	18 mos.	9	$225 yr.	M.S.	9
	ILLINOIS										
10	Michael Reese Hospital, Chicago	K. M. Howell, M.D.	2 yrs. coll.	560	431	12	12 mos.	2	$100	Certificate	10
11	Mt. Sinai Hospital, Chicago	I. Davidsohn, M.D.	2 yrs. coll.	163	116	7	18 mos.	5	$125	Diploma	11
12	Northwestern University (Passavant Hospital), Chicago	H. L. Alt, M.D.	2 yrs. coll.	300	120	12	12 mos.	8	$50	Certificate	12
13	St. John's Hospital, Springfield	F. W. Light, M.D.	R.N. or 2 yrs. coll.	567	417	4	12 mos.	4	$50	Certificate	13
14	St. Therese's Hospital, Waukegan	E. Pribram, M.D.	2 yrs. coll.	135	56	4	12 mos.	2	$60	Diploma	14
	INDIANA										
15	Indianapolis City Hospital, Indianapolis	H. C. Thornton, M.D.	2 yrs. coll.	538	429	7	12 mos.	1	$50	None	15
16	Methodist Episcopal Hospital, Indianapolis	H. M. Banke, M.D.	2 yrs. coll.	478	330	8	24 mos.	2	None	Certificate	16
17	South Bend Medical Laboratory,[2] South Bend	A. S. Giordano, M.D.	2 yrs. coll.	280	164	4	18 mos.	2	$125 yr.	None	17
	KANSAS										
18	University of Kansas Hospitals, Kansas City	C. J. Leitch, M.D.	B.S.	228	180	6	12 mos.	..	[c]	None	18
19	St. Francis Hospital, Wichita	C. A. Hellwig, M.D.	R.N. or 1 yr. coll.	275	140	5	12 mos.	4	$150	Diploma	19
	KENTUCKY										
20	St. Joseph's Hospital, Lexington	E. S. Maxwell, M.D.	2 yrs. coll.	187	115	6	12 mos.	3	$150	Certificate	20
21	University of Kentucky [a] (Good Samaritan Hospital), Lexington	M. Scherago, D.V.M.	High sch. grad.	200	135	Univ. fac.	4 yrs.	21	[4]	B.S.	21
22	St. Joseph Infirmary, Louisville	H. M. Weeter, M.D.	1 yr. coll.	320	172	4	12 mos.	2	$150	None	22
23	State Board of Health (Louisville City Hospital), Louisville	L. H. South, M.D.	1 yr. coll.	528	395	8	12 mos.	10	$300	Diploma	23
	LOUISIANA										
24	Loyola University,[a] [3] New Orleans	John G. Arnold, Jr., Ph.D.	High sch. grad.	348	209	Univ. fac.	4 yrs.	9	$120 yr.	B.S.	24
	MAINE										
25	Central Maine General Hospital, Lewiston	J. Gottlieb, M.D.	A.B. or B.S.	175	141	7	12 mos.	1	None	None	25
	MARYLAND										
26	Mercy Hospital, Baltimore	H. T. Collenberg, M.D.	R.N. or 1 yr. coll.	275	260	18	18 mos.	15	$150	Certificate	26
	MASSACHUSETTS										
27	Simmons College [a] (Faulkner Hospital), Boston	C. M. Hilliard, A.B.	4 yrs. coll.	130	119	4	12 mos.	5	$250	Certificate	27
28	Mercy Hospital, Springfield	J. E. Dwyer, M.D.	1 yr. coll.	330	200	4	12 mos.	5	None	Certificate	28
29	Worcester City Hospital, Worcester	R. H. Goodale, M.D.	R.N. or 1 yr. coll.	300	334	5	12 mos.	6	None	Certificate	29
30	Worcester State Hospital, Worcester	J. M. Looney, M.D.	B.S.	2,240	2,204	5	12 mos.	2	None	Certificate	30
	MICHIGAN										
31	Leila Y. Post Montgomery Hospital, Battle Creek	A. A. Humphrey, M.D.	2 yrs. coll.	158	78	3	12 mos.	2	None	None	31
32	Mercy Hospital, Bay City	W. G. Gamble, Jr., M.D.	2 yrs. coll.	122	75	3	12 mos.	..	$150	Certificate	32
33	Grace Hospital, Detroit	C. L. Owen, M.D.	R.N. or 2 yrs. coll.	483	324	5	12 mos.	6	$150	Diploma	33
34	Henry Ford Hospital [b] (Wayne University), Detroit	F. W. Hartman, M.D.	B.A. or B.S.	572	494	20	18 mos.	8	None	M.S.	34
35	Providence Hospital, Detroit	J. E. Davis, M.D.	2 to 4 yrs. coll.	315	289	7	12 mos.	2	None	Certificate	35
	MINNESOTA										
36	College of St. Scholastica [a] (St. Mary's Hospital), Duluth	G. L. Berdez, M.D.	High sch. grad.	250	167	16	4 yrs.	5	Coll. fee	B.S.	36
37	Swedish Hospital,[a] Minneapolis	C. R. Drake, M.D.	1 yr. coll.	271	151	8	24 mos.	8	$250	Certificate	37
38	University of Minnesota [a] [5] (University Hospitals), Minneapolis	W. A. O'Brien, M.D.	High sch. grad.	420	315	Univ. fac.	4 yrs.	182	Univ. fee	B.S.	38
39	Charles T. Miller Hospital, St. Paul	Kano Ikeda, M.D.	1 yr. coll.	199	122	6	12 mos.	6	$100	Certificate	39
	MISSISSIPPI										
40	Vicksburg Sanitarium and Crawford Street Hospital,[a] Vicksburg	L. S. Lippincott, M.D.	1 yr. coll.	75	38	6	24 mos.	6	None	Certificate	40
	MISSOURI										
41	University of Missouri [a] (University Hospitals), Columbia	M. P. Neal, M.D.	[c]	100	60	10	4 yrs.	2	[c]	B.S.	41
42	Kansas City Health Department Laboratory (Kansas City General Hospital), Kansas City	R. W. Kerr, M.D.	1 yr. coll.	430	352	18	18 mos.	15	None	Certificate	42
43	Menorah Hospital, Kansas City	R. Koritschoner, M.D.	2 yrs. coll.	121	76	5	15 mos.	4	None	None	43
44	Research Hospital, Kansas City	F. C. Narr, M.D.	2 yrs. coll.	200	143	6	12 mos.	5	None	None	44
45	St. Joseph Hospital,[a] Kansas City	E. T. Johnson, M.D.	Coll. grad.	225	115	9	24 mos.	6	None	Certificate	45
46	St. Luke's Hospital,[b] Kansas City	F. C. Helwig, M.D.	2 yrs. coll.	265	118	9	16 mos.	7	None	None	46
47	St. Louis University School of Nursing [a] (Firmin Desloge Hospital), St. Louis	W. D. Collier, M.D.	High sch. grad.	223	176	Univ. fac.	4 yrs.	23	$200 yr.	B.S.	47
	NEBRASKA										
48	University of Nebraska Hospital, Omaha	J. P. Tollman, M.D.	2 yrs. coll.	220	168	Univ. fac.	12 mos.	6	None	Certificate	48

V 107
1936

	NEW YORK									
49	Kilmer Pathological Laboratory (Binghamton City Hospital), Binghamton	V. W. Bergstrom, M.D.	R.N. or 1 yr. coll.	460	301	8	12 mos.	2	$25	Certificate	49
50	Jewish Hospital, Brooklyn	M. Lederer, M.D.	Coll. grad.	541	377	9	18 mos.	6	None	None	50
51	St. John's Hospital, Brooklyn	T. J. Curphey, M.D.	1 yr. coll.	204	180	4	18 mos.	3	$75	None	51
52	Buffalo City Hospital (University of Buffalo), Buffalo	E. B. Hanan, M.D.	2 yrs. coll.	1,025	967	19	12-24 mos.	16	[i]	None	52
53	St. Joseph's Hospital, Elmira	L. F. Bleyer, M.D.	1 yr. coll.	190	151	3	12 mos.	2	$75	Certificate	53
54	Mary Immaculate Hospital, Jamaica, L. I.	Emil Koch, M.D.	2 yrs. coll.	254	231	10	15 mos.	6	None	Diploma	54
55	Ellis Hospital, Schenectady	E. Kellert, M.D.	R.N. or 1 yr. coll.	245	219	7	12 mos.	6	None	None	55
	NORTH CAROLINA									
56	Duke Hospital, Durham	D. T. Smith, M.D.	2 yrs. coll.	406	277	17	15 mos.	12	$50	Certificate	56
	OHIO									
57	City Hospital, Akron	E. L. Saylor, M.D.	B.S. or B.A.	312	213	6	12 mos.	1	None	Certificate	57
58	Institute of Pathology, Western Reserve University (University Hospitals), Cleveland	H. Goldblatt, M.D.	1 yr. coll.	813	462	15	12 mos.	15	None	None	58
59	Mt. Sinai Hospital, Cleveland	B. S. Kline, M.D.	1 yr. coll.	225	147	7	12 mos.	8	$250	Certificate	59
60	Starling-Loving University Hospital, Columbus	H. L. Reinhart, M.D.	B.S. or B.A.	253	168	5	12 mos.	2	None	None	60
61	White Cross Hospital, Columbus	R. S. Fidler, M.D.	B.S.	246	141	5	12 mos.	2	None	None	61
62	College of Mount St. Joseph-on-the-Ohio [g] (Good Samaritan Hospital, Cincinnati), Mount St. Joseph	R. J. Norris, M.D.	R.N.[j] or B.S.	465	341	4	12 mos.	3	$150	M.S.	62
63	Youngstown Hospital, Youngstown	G. B. Kramer, M.D.	2 yrs. coll.	376	270	6	12 mos.	2	None	None	63
	OKLAHOMA									
64	University Hospital, Oklahoma City	Hugh Jeter, M.D.	Coll. grad.	485	447	8	12 mos.	3	None	None	64
65	Morningside Hospital, Tulsa	H. S. Nauheim, M.D.	1 yr. coll.	225	144	5	12 mos.	1	$150	Certificate	65
	OREGON									
66	Emanuel Hospital, Portland	H. H. Foskett, M.D.	Coll. grad.	230	183	6	12 mos	2	$150	None	66
67	Good Samaritan Hospital, Portland	C. H. Manlove, M.D.	1 yr. coll.	310	164	6	12 mos.	4	$150	None	67
68	St. Vincent's Hospital, Portland	T. D. Robertson, M.D.	1 yr. coll.	366	304	6	12 mos.	3	None	None	68
69	University of Oregon,[7] Portland	E. E. Osgood, M.D.	1 yr. coll.	375	322	13	12 mos.	4	None	Certificate	69
	PENNSYLVANIA									
70	Abington Memorial Hospital, Abington	John Elman, M.D.	1 yr. coll.	242	166	9	15 mos.	2	None	None	70
71	St. Luke's Hospital, Bethlehem	H. A. Rothrock, Jr., M.D.	2 yrs. coll.	190	143	4	12 mos.	2	$30	Diploma	71
72	Fitzgerald-Mercy Hospital, Darby	P. J. Kennedy, M.D.	1 yr. coll.	200	69	3	12 mos.	2	$150	Certificate	72
73	Harrisburg Hospital, Harrisburg	G. R. Moffitt, M.D.	1 yr. coll.	219	168	8	12 mos.	6	None	None	73
74	Bucknell University [a] (Geo. F. Geisinger Memorial Hospital, Danville), Lewisburg	H. Hunt, M.D.	High sch. grad.	162	121	5	4½ yrs.	2	Univ. fee	B.S.	74
75	Jefferson Medical College Hospital, Philadelphia	B. L. Crawford, M.D.	1 yr. coll.	631	489	12	12 mos.	6	$100	Certificate	75
76	Lankenau Hospital, Philadelphia	S. P. Reimann, M.D.	1 yr. coll.	256	187	7	12 mos.	4	$25	Certificate	76
77	Mt. Sinai Hospital, Philadelphia	D. R. Meranze, M.D.	1 yr. coll.	261	167	12	18 mos.	17	$125	Certificate	77
78	St. Agnes Hospital, Philadelphia	J. H. Smith, M.D.	1 yr. coll.	336	230	7	18 mos.	6	$50	Certificate	78
79	St. Joseph's Hospital, Philadelphia	L. A. Soloff, M.D.	1 yr. coll.	150	89	4	12 mos.	4	$100	Certificate	79
80	Temple University [a] (Temple University Hospital), Philadelphia	F. W. Konzelmann, M.D.	High sch. grad.	402	313	14	4 yrs.	30	$600	B.S.	80
	SOUTH CAROLINA									
81	Spartanburg General Hospital, Spartanburg	R. Mosteller, M.D.	2 yrs. coll.	284	173	4	18 mos.	3	None	Diploma	81
	TENNESSEE									
82	Knoxville General Hospital, Knoxville	R. H. Monger, M.D.	1 yr. coll.	350	152	3	12 mos.	3	None	Diploma	82
83	Memphis General Hospital, Memphis	H. Schmeisser, M.D.	B.S. or B.A.	364	377	13	12 mos.	..	None	Certificate	83
	TEXAS									
84	Baylor University Hospital, Dallas	J. M. Hill, M.D.	2 yrs. coll.	300	268	10	12 mos.	11	$100	Certificate	84
85	St. Paul's Hospital, Dallas	J. L. Goforth, M.D.	R.N. or coll. degree	210	184	8	12 mos.	2	$100	Certificate	85
86	Robert B. Green Memorial Hospital, San Antonio	R. E. Scott, M.D.	2 yrs. coll.	130	106	4	12 mos.	3	None	Certificate	86
	VIRGINIA									
87	U. S. Marine Hospital, Norfolk	F. C. Smith, M.D.	1 yr. coll.	300	242	8	12 mos.	4	None	Certificate	87
88	College of William and Mary [a] (Stuart Circle Hospital), Richmond	R. C. Beck, M.D.	High sch. grad.	84	56	4	4 yrs.	3	Coll. fee	B.S.	88
89	Medical College of Virginia Hospital Division, Richmond	W. B. Porter, M.D.	2 yrs. coll.	424	355	12	12 mos.	4	$100	Certificate	89
	WASHINGTON									
90	Sacred Heart Hospital, Spokane	M. M. Patton, M.D.	2 yrs. coll.	276	216	3	12 mos.	2	$115	None	90
91	St. Luke's Hospital, Spokane	R. F. E. Stier, M.D.	2 yrs. coll.	173	112	6	12 mos.	3	None	Certificate	91
	WISCONSIN									
92	Madison General Hospital, Madison	L. McGary, M.D.	R.N. or 2 yrs. coll.	135	118	2	12 mos.	2	None	Certificate	92
93	St. Mary's Hospital, Madison	S. B. Pessin, M.D.	1 yr. coll.	175	110	7	18 mos.	4	None	Diploma	93
94	Wisconsin General Hospital, Madison	W. D. Stovall, M.D.	2 yrs. coll.	630	611	14	12 mos.	14	$25	Certificate	94
95	St. Joseph's Hospital, Milwaukee	John Grill, M.D.	2 yrs. coll.	325	121	5	12 mos.	2	None	Certificate	95
96	Milwaukee County General Hospital, Wauwatosa	John Grill, M.D.	2 yrs. coll.	1,050	746	8	24 mos.	4	None	Certificate	96

Notes

a. Regular four-year course leading to a B.S. degree.
b. Postgraduate course leading to an M.S. or M.A. degree.
c. Charged on basis of so much per credit hour.
d. Students in state, $94 year; out-of-state students, $120 year.
e. Course includes twelve months x-ray training.
f. Same as for medical students.
g. Course includes six months x-ray training.
h. Course includes four months x-ray training.
i. Ten dollars per credit hour.
j. Plus college chemistry and biology.
k. Four and one-half year course leading to a B.S. degree.

Additional Affiliations

1. Mercy Hospital, Denver—225 beds; 143 occupancy.
   St. Anthony's Hospital, Denver—182 beds; 90 occupancy.
   Greeley Hospital, Greeley—88 beds; 63 occupancy.
   Sanatorium of the Jewish Consumptives' Relief Society, Spivak—300 beds; 194 occupancy.
2. Epworth Hospital, South Bend—155 beds; 91 occupancy.
   St. Joseph Hospital, South Bend—125 beds; 73 occupancy.
3. Hotel Dieu Hospital, New Orleans—230 beds; 139 occupancy.
   Mercy Hospital, New Orleans—118 beds; 70 occupancy.
4. Boston Dispensary, and State Laboratory, Boston.
5. Minneapolis General Hospital, Minneapolis—607 beds; 482 occupancy.
6. Mississippi State Charity Hospital, Vicksburg—100 beds; 72 occupancy.
7. Doernbecher Memorial Hospital for Children, Portland—75 beds; 48 occupancy.
   Multnomah Hospital, Portland—300 beds; 274 occupancy.

or four years of college training, including basic sciences or graduation from an accredited nursing school. The work is not highly organized, as the majority of the schools have from two to four students enrolled each year. Students attend lectures with nurses or separately. Text assignments, demonstrations and examinations are regularly scheduled.

3. *Commercial Schools.* — The large tuition fees always required by commercial schools constitute the main admission requirement. Students are recruited through extravagant advertising in newspapers and magazines or by a series of follow-up letters, which are often so worded as to imply that employment is secured for graduates at attractive salaries. Since such schools depend on a continuous and expensive campaign of advertising, they are tempted to admit whatever candidates apply regardless of adequate preparation. For the same reason, there is a tendency to admit students whenever they apply. The Council's continuous contact with hospital laboratories and pathologists throughout the country has provided incontrovertible evidence that graduates of commercial schools are not as a class the most desirable.

The survey of schools included twenty-six universities and colleges, 149 hospital laboratory schools, twelve independent laboratories and nine schools of commercial type, operating independently of hospitals or educational institutions. The inspection reports include the following data: organization, teaching staff, clinical facilities, physical equipment, records, entrance requirements, curriculum, library and affiliations. Copies of these reports have been supplied to the Board of Registry for its use in evaluating the training provided by the various schools.

After a careful study of the data gathered in the survey, minimum standards for the approval of schools for clinical laboratory technicians were formulated. It was mutually agreed in conference with members of the Board of Registry that the Council on Medical Education and Hospitals would maintain a list of approved schools for clinical laboratory technicians in operation throughout the United States and would maintain a continuous contact with and inspection of such approved schools.

The essentials were adopted by the Council on May 10, 1936, and after having been approved by the Board of Registry of the American Society of Clinical Pathologists were passed on by the House of Delegates at the Kansas City session, May 11-15, 1936. It will be noted that these essentials do not differ greatly from those formerly adopted by the Board of Registry.

ESSENTIALS OF AN ACCEPTABLE SCHOOL FOR CLINICAL LABORATORY TECHNICIANS

I. Organization

1. Acceptable schools for training laboratory technicians may be conducted by general hospitals, colleges or universities. Consideration may be given courses operated by public health laboratories or by pathologists.

2. Responsibility for courses in hospitals should be placed on the hospital administration rather than the laboratory director. In colleges and universities this responsibility is on the controlling board, as for other courses.

3. Resources for continued operation of the school should be insured through regular budgets, gifts or endowments; but not entirely through students' tuition fees. Experience has shown that commercial schools operated for profit frequently do not adhere to proper ethical and educational standards and are, as a rule, not considered acceptable.

4. There must be available transcripts of high school, college work and other credentials. Attendance and grades of students shall be carefully recorded, by means of which an exact knowledge may be obtained regarding each student's work.

II. Faculty

5. The school should have a competent teaching staff. The director must be a graduate in medicine and a pathologist or clinical pathologist of recognized ability. He shall take part in and be responsible for the actual conduct of the training course. He shall be in daily attendance for sufficient time to supervise properly the laboratory work and teaching.

6. In laboratory practice the enrolment shall not exceed one student to each member of the teaching staff. The staff should include not less than one salaried instructor who is a registered technician or eligible for registration, in addition to the laboratory director.

III. Clinical Facilities

7. Each student should receive practice training, adequate in kind and amount, under competent supervision, in a hospital laboratory. The hospital should be registered by and be otherwise acceptable to the Council on Medical Education and Hospitals of the American Medical Association and have a minimum of 2,000 yearly admissions.

8. Adequate space, light and modern equipment shall be provided in the laboratory department. A library containing up-to-date references, texts and scientific periodicals pertaining to clinical laboratory work and pathology should be maintained.

9. Satisfactory record systems shall be provided for all work carried on in the department. Monthly and annual classifications of the work of the department should be prepared.

IV. Curriculum

10. A. Candidates for admission should be able to satisfy one of the following requirements:

1. One year of college work, including chemistry and biology from a recognized college or university. Jan. 1, 1938, this requirement is to be raised to two years of college work.
2. Graduation from a school of nursing recognized by the state board of nurse examiners, and in addition college chemistry.

B. The course of training shall be not less than twelve months in duration and shall include the following divisions:

1. Biochemistry.
2. Hematology.
3. Bacteriology.
4. Parasitology.
5. Histologic technic.
6. Serology.

The instruction shall include:

1. Text assignments.
2. Lectures.
3. Demonstrations.
4. Quizzes.
5. Examinations—written, oral and practical.

V. Ethics

11. Exorbitant fees and commercial advertising shall be considered unethical.

12. Schools conducted for the purpose of substituting students for paid technicians will not be considered for approval.

The Board of Registry, to which full credit must be given for the splendid pioneering work in this field, is made up of six members, two of whom are elected annually by the American Society of Clinical Patholo-

V 107
1936

gists and serve for a term of three years. The following members comprise the present board: Philip Hillkowitz, M.D., chairman, Denver; Kano Ikeda, M.D., secretary, St. Paul; Israel Davidsohn, M.D., Chicago; H. H. Foskett, M.D., Portland, Ore.; Roy R. Kracke, M.D., Atlanta, Ga., and Asher Yaguda, M.D., Newark, N. J.

According to the Registry, over 3,500 members were enrolled June 1, 1936. This number approximates one third of the clinical laboratory technicians in the United States and Canada.

Applicants for registration may secure blanks and information from the registrar, Mrs. Anna R. Scott, 234 Metropolitan Building, Denver, Colorado.

ESSENTIALS OF AN ACCEPTABLE SCHOOL OF OCCUPATIONAL THERAPY

I. Organization

1. A school of occupational therapy should be incorporated under the laws regulating associations which are operated not for profit. The control should be vested in a board of trustees rather than an individual. This board should be composed of public spirited men or women receiving no financial benefits from the operations of the schools. The trustees should serve for fairly long and overlapping terms. If the choice of trustees is vested in any other body than the board itself, this fact should be clearly stated. Officers and faculty of the school should be appointed by the board.

2. Affiliation with a college, university or medical school is highly desirable but is not an absolute requirement.

3. Schools of occupational therapy should not be operated by hospitals independently. It is understood, however, that hospitals are needed for practice training and especially for graduate training in the special branches of occupational therapy.

II. Faculty

1. The school should have a competent teaching staff, graded and organized by departments. Appointments should be based on thorough education and training and successful teaching experience. Nominations for faculty positions should be made in accordance with academic custom. The staff should include not less than one regular salaried instructor and one registered occupational therapist. The question of full time and part time appointments is not as important as the qualifications of the instructors, who should be specialists or exceptionally well trained and well qualified in the lines they are teaching.

III. Plant

1. The school should own, or enjoy the use of, buildings sufficient in size to provide adequate lecture rooms, class laboratories and administration offices. Equipment should be adequate for teaching and training. Anatomic charts, manikins and dummies should also be provided. There should be a library receiving regularly all the leading periodicals pertaining to occupational therapy, current numbers of which should be easily accessible to the students.

IV. Administration

1. *Supervision.*—There should be careful and intelligent supervision of the entire school by the dean, director or other executive officer, who, by training and experience, is fitted to interpret the prevailing standards and who is clothed with sufficient authority to carry them into effect.

2. *Records.*—There should be a good system of records showing conveniently and in detail the credentials, attendance, grades and accounts of the students, by means of which an exact knowledge can be obtained regarding each student's work. Schools should require that students be in actual attendance within the first week of each annual session and thereafter. Except for good cause, no credit should be given for any course when attendance has been less than 80 per cent.

3. *Credentials.*—The admission of students to the occupational therapy school must be in the hands of a responsible committee or examiner, whose records shall always be open for inspection. Documentary evidence of the student's preliminary education should be obtained and kept on file. When the occupational therapy school is an integral part of the university, this work usually devolves on the examiner or registrar.

4. *Advanced Standing.*—At the discretion of the administration, advanced standing may be granted for work required in the occupational therapy curriculum which has been done in other accredited institutions. Official verification of previous work should be obtained by direct correspondence. Preliminary qualifications should also be verified and recorded.

5. *Number of Students.*—The number of students admitted to the training course should not be excessive. In practical work of a laboratory nature the number of students that can be adequately supervised by a single instructor is, in general experience, about fifteen; in lectures the number may be much larger. A close personal contact between students and members of the teaching staff is essential.

6. *Discipline.*—All training schools reserve the right to drop a student at any time for any cause which the school authorities deem sufficient.

7. *Publications.*—The school should issue, at least biennially, a bulletin setting forth the character of the work which it offers. Such an announcement should contain a list of the members of the faculty with their respective qualifications.

V. Prerequisites for Admission

Requirements for admission should be:

1. *Age.*—The admission of candidates should be governed by the fact that it is required that each student be not less than 21 years old at graduation.

2. *Education.*—All candidates must furnish proof of having completed a high school education or its equivalent. In addition, it is desirable that all candidates, except those for the degree course, shall have had at least one year, and preferably two years, of further education or successful experience in college, art school, social service, nurse's training or the commercial field.

Candidates for admission to a training course in a college or university which is combined with work leading to a bachelor's degree should be required to comply with the regular entrance requirements of the institution concerned.

3. *Character.*—All candidates should be required to present evidence of good character and general fitness, the evidence of which should be investigated and duly weighed by the school concerned.

4. *Health.*—All students should be given a physical examination under the supervision of the school as soon as practicable after admission, and this examination should be repeated annually. The first examination, at least, should include a roentgen examination of the chest.

VI. Curriculum

1. *Length of Course.*—The minimum length of the course should be twenty-five calendar months (100 weeks) of full time training. The course should include not less than sixteen months (sixty-four weeks) of theoretical and technical work, and not less than nine months (thirty-six weeks) hospital practice-training under competent supervision; all as set forth in detail in succeeding sections.

2. *Distribution of Time.*—The two years devoted to theoretical training should include not less than sixty semester hours, of which not less than thirty semester hours should consist of systematic instruction and not less than twenty-five hours of laboratory procedures. In special cases a variation of 10 per cent is permissible.

a. The hours devoted to theoretical training should be still further subdivided as follows:

	Semester Hours
(1) Biologic Sciences include: Anatomy, Physiology, Neurology, Kinesiology, Psychology, Psychiatry	15
(2) Social Sciences	4
(3) Theory of Occupational Therapy	4
(4) Clinical Subjects include: Orthopedics, Tuberculosis, Cardiac Diseases, Blindness and Deafness, Contagious Diseases (including Bacteriology if this subject is not given elsewhere), General Medical and Surgical Conditions	4
(5) Electives	3
Total	30

b. Practical work in the various occupations should be allotted not less than twenty-five semester hours. The following subjects should be covered:

Design	Leather
Textiles	Plastic Arts
Wood	Recreation
Metal	Miscellaneous

c. The time devoted to hospital practice training shall be not less than nine months spent in the following types of hospitals:

Mental Hospitals	Not less than two months.
Tuberculosis Hospitals and Sanatoriums	Not less than one month.
General Hospitals	Not less than one month.
Children's Hospitals or Services	Not less than one month.
Orthopedic Hospitals or Services	Not less than one month.

The remaining three months optional.

3. The curriculum outlined above should be in effect not later than Jan. 1, 1939.

ESSENTIALS OF AN ACCEPTABLE MEDICAL SCHOOL

I. Organization

A medical school should be incorporated as a nonprofit institution. Its board of trustees should be composed of public spirited men or women having no financial interest in the operations of the school or its associated hospitals. The trustees should serve for fairly long and overlapping terms. If the choice of trustees is vested in any other body than the board itself, that fact should be clearly stated. Officers and faculty of the school should be appointed by the board.

II. Administration

There should be careful and intelligent supervision of the entire school by the dean or other executive officer who, by training and experience, is fitted to interpret the prevailing standards in medical education, and who is clothed with sufficient authority to carry them into effect.

There should be a good system of records showing conveniently and in detail the credentials, attendance, grades and accounts of the students, by means of which an exact knowledge can be obtained regarding each student's work. Records should also be kept showing readily the attendance of students at the teaching hospitals and dispensaries and the maternity and postmortem cases attended.

The school should require that students be in actual attendance within the first week of each annual session and thereafter. Except for good cause, such as for illness, no credit should be given for any course when the attendance has been less than 80 per cent of the full time.

The school should issue, at least annually, a bulletin setting forth the character of the work which it offers. Such announcement should contain a list of the members of the faculty with their respective qualifications. The courses available should be set forth by departments (anatomy, physiology, etc.) showing for each course its number, subject, content, character (lecture, recitation, laboratory or clinic), length of time, when, where and by whom given, and the amount of credit allowed. Information should be given regarding entrance requirements and tuition fees. The names of the students enrolled during the current or previous sessions should also be included.

The number of students to whom an adequate medical education can be given by a college is related approximately to the laboratory and hospital facilities available and to the size and qualifications of the teaching staff. A close personal contact between students and members of the teaching staff results in an efficiency which is not possible in an institution where the number of students is excessive.

Advanced standing may be granted to students for work done in other acceptable medical schools, and in granting advanced standing there should be no discrimination against the school's full course students. Official verification of the student's previous medical work should be obtained by direct correspondence with the schools previously attended, and his preliminary qualifications should also be verified and recorded the same as for freshmen students.

The admission of students to the medical school must be in the hands of a responsible committee or examiner, whose records shall always be open for inspection. Documentary evidence of the student's preliminary education should be obtained and kept on file. When the medical school is an integral part of the university, this work usually devolves on the university examiner. Unless the university examiner and his records are closely accessible, however, some officer at the medical school should obtain and keep on file documentary evidence of each student's preliminary education, including both high school and collegiate work. The records must show especially that the required amount of work in the premedical sciences, including laboratory experiments, has been completed.

III. Faculty

The school should have a competent teaching staff, graded and organized by departments. Appointments should be based on thorough training, successful teaching experience, ability in research, and willingness to pursue an academic career. In the clinical departments this does not exclude men who are in the active practice of medicine and surgery. Nominations for faculty positions should originate in the faculty, usually being made by the dean in consultation with the department heads or a committee of the faculty. Reasonable security of tenure must be assured in order that the personnel of the faculty may have adequate stability. In the preclinical sciences the faculty should include at least ten qualified persons of professorial rank,[1] devoting their entire time to teaching and to that research without which they cannot well keep up with the rapid progress of medical science. For each twenty-five students in a class there should be at least one full-time assistant in each of the preclinical departments. Salaries should be sufficient to enable members of the faculty to support themselves and their families without the necessity of devoting time and energy to other occupations.

IV. Plant

The school should own, or enjoy the assured use of, modern fireproof buildings sufficient in size to provide lecture rooms, class laboratories, small laboratories for the members of the teaching staff and advanced students, administrative offices and a medical library. Equipment should be adequate, both for student use and for research. A trained librarian should be employed to supervise the operation and development of the library, which should include the more modern text and

1. Professorial rank as here used includes professors, associate professors and assistant professors.

V 107 1936

reference books with the *Quarterly Cumulative Index Medicus*, the *Index Catalogue of the Library of the Surgeon-General's Office* and serviceable card indexes. The library should receive regularly all of the leading medical periodicals, the current numbers of which should be in racks or on tables easily accessible to the students. At the end of each year these periodicals should be bound and added to the files of bound periodicals.

There should be a medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed so that they may be easily found and employed for teaching purposes. With each pathologic specimen coming from postmortems there should also be kept the record of the postmortem, the clinical history of the patient on whom the necropsy was held, and microscopic slides showing the minute structure of the disease shown in the gross specimen. The museum furnishes an excellent means of correlating the work of the department of pathology with that of the clinical departments.

There should be sufficient dissecting material to enable each student to dissect at least the lateral half of the human cadaver, to provide cross-sections and other demonstration material and to allow a thorough course for each senior in operative surgery on the cadaver.

For experimental laboratory work, as well as for medical research, a supply of animals is essential. Proper provision is necessary also for the housing and care of such animals. In any use made of animals every precaution should be taken to prevent suffering, and work by students should be carefully supervised.

Each school should have such useful auxiliary apparatus as stereopticons, reflectoscopes, microprojectors, carefully prepared charts, embryologic or other models, manikins, dummies for use in bandaging, roentgen-ray apparatus, and other aids to effective teaching.

V. Clinical Facilities

The school may own or control a general hospital. By control is meant the unquestioned right to appoint the attending staff. In this event the students come into close and extended contact with patients under adequate supervision. In the event that a medical school depends for clinical teaching on an independent hospital, it is essential that the clinical teachers, either on nomination by the school or by agreement in conference between school and hospital, be appointed by the hospital trustees to appropriate positions on the hospital staff. Such hospitals should be in close proximity to the school and have a daily average of not less than 200 patients who can be utilized for clinical teaching, these patients to be of such character as to permit the students to see and study the common variety of surgical and medical cases as well as a fair number in each of the so-called specialties. In the use of this material, bedside and ward clinics should be developed for sections of from five to ten students; and patients in medicine, surgery and the specialties should be assigned to each student under a well supervised clinical clerk system. The treatment and care of these patients should be particularly observed and recorded by the student under the strict supervision of the intern, the resident or the attending staff of the hospital. The use of existing municipal or state hospitals for teaching purposes is also advised.

The school should also own or control ample hospital facilities for children's diseases, contagious diseases and nervous and mental diseases.

The school should own or control a well ordered dispensary or outpatient department with a daily average attendance of at least 100 patients (visits). Good histories and records of the patients should be kept and the material used in medical instruction. The attending staff should be drawn largely from the faculty, including those of highest rank.

At least fifteen maternity cases should be provided for each senior student, who should have actual charge of these cases under the supervision of the clinical instructor. A carefully prepared report of each case should be handed in by the student.

Facilities should be provided for at least fifty necropsies during each school session which are attended and participated in by students. These should be performed by the professor of pathology or a member of his staff. The material thus secured should be used in connection with clinical pathologic conferences.

VI. Resources

Experience has shown that modern medicine cannot be acceptably taught by a school which depends solely on the income from students' fees. No medical school, therefore, should expect to secure approval which does not have a substantial income in addition to students' fees. This statement carries double weight if the school finds it necessary to maintain its own teaching hospital.

VII. Requirements for Admission

1. The minimum of collegiate credit required for entrance to approved medical schools shall be not less than two full academic years, which shall include English, theoretical and practical courses in physics and biology, and general and organic chemistry, completed in institutions approved by accrediting agencies acceptable to the Council.

2. Admission to approved medical schools may also be by examination under the following conditions:

(*a*) Candidates who have completed two years of collegiate instruction and present evidence of general scholarship of high order, but who lack credits in not more than two of the required subjects, may be admitted on passing examinations in these subjects.

(*b*) Candidates who have completed three years of collegiate instruction and present evidence of having accomplished work of distinction in one or more fields of learning, but who lack credit in any or all of the required subjects, may be admitted on passing examinations in these subjects.

A list of colleges of arts and sciences approved by the various national and regional standardizing agencies has been prepared by the Council for the guidance of medical schools in the selection of students. Exception may be made in that any school may admit applicants who have fulfilled the requirement in American or Canadian institutions not approved by such accrediting agencies, provided the applicant gives evidence of superior ability.

All collegiate instruction given in satisfaction of this requirement must be based on the same entrance requirements and must be of the same quality and standard of instruction as that required for a baccalaureate degree in the institution in which the candidate receives his preparation.

VIII. Curriculum

The entire course of four years shall consist of from 3,600 to 4,400 hours, distributed as from 900 to 1,100 hours per year, and shall be grouped as set forth in the following schedule, each group to be allotted approximately the percentage of hours of the whole number of hours in the courses as stated:

1. Anatomy, including Embryology and Histology	14	—	18½ %
2. Physiology	4½	—	6 %
3. Biochemistry	3½	—	4½ %
4. Pathology, Bacteriology and Immunology	10	—	13 %
5. Pharmacology	4	—	5 %
6. Hygiene and Sanitation	3	—	4 %
7. General Medicine Neurology and Psychiatry Pediatrics Dermatology and Syphilis	20	—	26½ %
8. General Surgery Orthopedic Surgery Urology Ophthalmology Otolaryngology Roentgenology	13	—	17½ %
9. Obstetrics and Gynecology	4	—	5 %
Total	76	—	100 %
Electives	24	—	0 %

When the teaching conditions demand it, a subject may be transferred from one division to another.

Several of the medical schools now require an internship for graduation. Where it is not obligatory it is strongly urged and graduates should be assisted in securing internships in hospitals approved by the Council on Medical Education and Hospitals of the American Medical Association.

DESCRIPTION OF MEDICAL COLLEGES

ALABAMA

University

UNIVERSITY OF ALABAMA SCHOOL OF MEDICINE.—Organized in 1859 at Mobile as the Medical College of Alabama. Classes graduated in 1861 and subsequent years excepting 1862 to 1868, inclusive. Reorganized in 1897 as the medical department of the University of Alabama. Present title assumed in 1907, when all property was transferred to the University of Alabama. In 1920 clinical teaching was suspended and the medical school was removed to the university campus near Tuscaloosa. Coeducational since 1920. Minimum entrance requirements are ninety semester hours of collegiate work. The course of study covers two years of thirty-six weeks each. The faculty includes 14 professors and 13 instructors, assistants, etc., a total of 27. The tuition fees are $271 each year. Each class is limited to fifty students. Total registration for 1935-1936 was 112. The next session begins Sept. 9, 1936, and ends May 26, 1937. The Dean is Stuart Graves, M.D.

ARKANSAS

Little Rock

UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE, 300 West Markham Street.—Organized in 1879 as the Medical Department of Arkansas Industrial University. Present title in 1899. In 1911 the College of Physicians and Surgeons united with it and it became an integral part of the University of Arkansas. The first class was graduated in 1880. Clinical teaching was suspended in 1918 but resumed in 1923. Coeducational since organization. The faculty consists of 29 professors and 65 lecturers and assistants, total 94. The curriculum covers four years of nine months each. Entrance requirements are two years of collegiate work. The B. S. degree in medicine is conferred at the end of the second year. The fees for the four years for residents of Arkansas are $230; nonresidents are charged $150 additional each year. The total registration for 1935-1936 was 289; graduates, 48. The next session begins Sept. 30, 1936, and ends June 7, 1937. The Dean is Frank Vinsonhaler, M.D

CALIFORNIA

Berkeley-San Francisco

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL, University Campus, Berkeley; Medical Center, San Francisco—Organized in 1862 as the Toland Medical College. The first class graduated in 1864. In 1872 it became the Medical Department of the University of California. In 1909, by legislative enactment, the College of Medicine of the University of Southern California, at Los Angeles, became a clinical department but was changed to a graduate school in 1914. In 1915 the Hahnemann Medical College of the Pacific was merged, and elective chairs in homeopathic materia medica, and therapeutics were provided. Coeducational since organization. Three years of collegiate work is required for admission. The work of the first year is given at Berkeley and that of the last three years at San Francisco. The faculty is composed of 130 professors and 256 associates and assistants, a total of 386. The course covers four years of eight months each, and an additional fifth year consisting of an internship in a hospital or of special work in a department of the medical school. Fees for the four years, respectively, for residents of California are $277, $240, $235 and $235; nonresidents are charged $300 additional each year. Total registration for 1935-1936 was 238; graduates, 57. The next session begins Aug. 24, 1936, and ends May 22, 1937. The Dean is W. McKim Marriott, M.D., San Francisco.

Loma Linda-Los Angeles

COLLEGE OF MEDICAL EVANGELISTS.—Organized in 1909. The first class graduated in 1914. The laboratory departments are at Loma Linda, the clinical departments at Los Angeles. Coeducational since organization. The faculty is composed of 59 professors and 240 associates, assistants and instructors, a total of 299. The course covers a period of five years, including one year of internship. During the second year the students are in school twelve months. This is accomplished by means of the "cooperative plan," the student spending alternate months in an approved hospital in practical lines of medical training. The first, third and fourth years each cover ten months of continuous school work. Sixty-four semester hours of collegiate work are required for admission. The total fees for the four years, respectively, are $470, $375, $485, and $475. The total registration for 1935-1936 was 394; graduates 85. The next session begins Sept. 1, 1936 and ends June 13, 1937. The Dean is E. H. Risley, M.D., Loma Linda, California; and the Associate Dean is W. E. Macpherson, M.D., Los Angeles, California.

Los Angeles

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE, 3551 University Avenue.—Organized in 1885 as the University of Southern California College of Medicine. First class graduated in 1888. In 1908 it became the Medical Department of the University of California in Los Angeles. In 1909 the College of Physicians and Surgeons, established in 1904, became the Medical Department of the University of Southern California. Its activities were suspended in 1920; reorganized in May 1928, under present title. The faculty consists of 144 professors and 135 instructors, assistants and others, a total of 279. An internship is required for graduation. Three years of collegiate work is required for admission. Coeducational since organization. Annual fees amount to $450. The total registration for 1935-1936 was 190; graduates, 30. The next session begins Sept. 21, 1936, and ends June 5, 1937. The Dean is Paul S. McKibben, Ph.D.

San Francisco

STANFORD UNIVERSITY SCHOOL OF MEDICINE, 2398 Sacramento Street, San Francisco.—Organized in 1908, when, by agreement, the interests of Cooper Medical College were taken over. The first class graduated in 1913. Coeducational since organization. The faculty consists of 108 professors and 156 lecturers, assistants and others, a total of 264. Three years of collegiate work is required for admission. The course covers four years of eight and one-half months each, plus a fifth year of intern work. The fees for the four years, respectively, are $470, $446, $364 and $364. The total registration for 1935-1936 was 234; graduates, 45. The next session begins Sept. 29, 1936, and ends June 9, 1937. The Dean is Loren Roscoe Chandler, M.D.

COLORADO

Denver

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, 4200 East Ninth Avenue.—Organized in 1883. Classes were graduated in 1885 and in all subsequent years except 1898 and 1899. Denver and Gross College of Medicine was merged, Jan. 1, 1911. Coeducational since organization. The faculty is composed of 57 professors and 130 lecturers, instructors and assistants, a total of 187. The course covers four years of nine months each. The entrance requirements are three years of collegiate work. The fees for residents of Colorado, for each of the four years are, respectively, $253, $243, $223, and $233. Nonresidents are charged $165 additional each year. The total registration for 1935-1936 was 205; graduates, 50. The next session begins Sept. 28, 1936 and ends June 14, 1937. The Dean is Maurice H. Rees, M.D.

CONNECTICUT

New Haven

YALE UNIVERSITY SCHOOL OF MEDICINE, 333 Cedar Street.—Chartered in 1810 as the Medical Institution of Yale College. Organized in 1812; instruction began in 1813; first class graduated in 1814. A new charter in 1879 changed the name to the Medical Department of Yale College. In 1884, the Connecticut Medical Society surrendered such authority as had been granted by the first charter. In 1887, Yale College became Yale University. Coeducational since 1916. The faculty consists of 130 professors and 229 lecturers and assistants, a total of 359. The requirements for admission are three years of collegiate work. The course covers four years of nine months each. The fees for the four years, respectively, are $505, $500, $500 and $520. The total registration for 1935-1936 was 206; graduates, 44. The next session begins Sept. 28, 1936, and ends June 16, 1937. The Dean is Stanhope Bayne-Jones, M.D.

DISTRICT OF COLUMBIA

Washington

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, 3900 Reservoir Road, N.W.—Organized 1851. First class graduated in 1852. The faculty is composed of 57 professors, 43 associate professors, 19 assistant professors and 118 instructors; total 237. Required for admission, three years of collegiate work. The course of study covers four terms of eight and one-half months each. The present fees for each of the four sessions respectively, are $465, $460, $410 and $450. The total registration for 1935-1936 was 474; graduates, 134. The next session begins Sept. 21, 1936 and ends June 14, 1937. The Dean is David V. McCauley, S. J., Ph.D.

GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, 1335 H Street, N.W.—Organized in 1825 as the Medical Department of Columbian College. Also authorized to use the name National Medical College. Classes were graduated in 1826 and in all subsequent years except 1834 to 1838, and 1861 to 1863, inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1903 it absorbed the National University Medical Department. In 1904, by an act of Congress, the title of George Washington University was granted to the institution. Coeducational since 1884. The faculty is composed of 55 professors and 115 instructors, demonstrators and assistants, a total of 170. Two years of collegiate work is required for admission. The course covers four years of thirty-two weeks each. The fees for the four years, respectively, are $550, $500, $500 and $500. The total registration for 1935-1936 was 258; graduates, 69. The next session begins Sept. 23, 1936 and ends June 6, 1937. The Dean is Earl B. McKinley, M.D.

HOWARD UNIVERSITY COLLEGE OF MEDICINE, Fifth and W Streets, N.W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Coeducational since organization. Negro students compose a majority of those in attendance. The faculty comprises 29 professors and 84 lecturers and assistants, 113 in all. The admission requirements are at least two years of collegiate work. The course covers four years of thirty-three weeks each. The fees for each of the four sessions, respectively, are $269, $269, $259 and $266. Registration for 1935-1936 was 142; graduates, 35. The next session begins Sept. 26, 1936, and ends June 11, 1937. The Dean is Numa P. G. Adams, M.D.

V 10
1936

GEORGIA

Atlanta

EMORY UNIVERSITY SCHOOL OF MEDICINE, 50 Armstrong Street and Druid Hills.—Organized in 1854 as the Atlanta School of Medicine. Classes graduated 1855 to 1861, when it suspended. Reorganized in 1865. A class graduated in 1865 and each subsequent year except 1874. In 1898 it merged with the Southern Medical College (organized in 1878), taking the name of Atlanta College of Physicians and Surgeons. In 1913 it merged with the Atlanta School of Medicine (organized in 1905), reassuming the name of Atlanta Medical College. Became the Medical Department of Emory University in 1915; assumed present title in 1917. Two years of collegiate work is required for admission. The faculty consists of 18 professors and 177 associates and assistants, a total of 195. The course of study is four years of thirty-two weeks each. The fees for each of the four years are $300. Total registration for 1935-1936 was 223; graduates, 53. The next session begins Sept. 28, 1936, and ends June 7, 1937. The Dean is Russell H. Oppenheimer, M.D.

Augusta

UNIVERSITY OF GEORGIA SCHOOL OF MEDICINE, University Place.—Organized in 1828 as the Medical Academy of Georgia, the name being changed to the Medical College of Georgia in 1829. Since 1873 it has been known as the Medical Department of the University of Georgia, the name being changed July 1, 1933, to University of Georgia School of Medicine. Property transferred to university in 1911. Classes were graduated in 1833 and all subsequent years except 1862 and 1863. Coeducation was begun in 1920. The faculty includes 50 professors and 35 assistants, 85 in all. Three years of collegiate work is required for admission. The course is four years of thirty-four weeks each. The fees for each of the four years are $185 for residents of Georgia, and $365 each year for nonresidents. The total registration for 1935-1936 was 148; graduates 37. The next session begins Sept. 21, 1936, and ends June 7, 1937. The Dean is G. Lombard Kelly, M.D.

ILLINOIS

Chicago

LOYOLA UNIVERSITY SCHOOL OF MEDICINE, 706 South Lincoln Street.—Incorporated in 1915 as the Bennett Medical College, and operated as an organic part of Loyola University, by virtue of an agreement entered into with the trustees of Bennett Medical College. Present title assumed in 1917. The Chicago College of Medicine and Surgery was purchased in 1917. The first class graduated in 1916. Coeducational. Three years of collegiate work is required for admission. The course of study is five years, including an internship. The B.S. degree in medicine is conferred at the end of the third year. The faculty is composed of 138 in professorial rank and 163 others, a total of 301. The fees for each year are $371, $407, $336 and $298, respectively. The total enrolment for 1935-1936 was 507; graduates, 98. The next session begins Sept. 28, 1936, and ends June 12, 1937. The Dean is Louis D. Moorhead, M.D.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, 303 East Chicago Avenue.—Organized in 1859 as the Medical Department of Lind University. First class graduated in 1860. In 1864 it became independent as the Chicago Medical College. It united with Northwestern University in 1869 but retained the name of Chicago Medical College until 1891, when the present title was taken. Became an integral part of Northwestern University in 1905. Coeducational since 1926. The faculty comprises 129 professors, 303 associates and instructors, a total of 432. The requirement for admission is three years of collegiate work. The B.S. degree in medicine may be conferred before the end of the senior year. The course covers four years of eight and one-half months each and a fifth year spent in an approved hospital as an intern or in other practical work. The total fees are $365 each year. The total registration for 1935-1936 was 564; graduates, 160. The next session begins Sept. 29, 1936, and ends June 12, 1937. The Dean is Irving S. Cutter, M.D.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, 1853 West Polk Street.—Organized in 1882 as the College of Physicians and Surgeons. The first class graduated in 1883. It became the Medical Department of the University of Illinois by affiliation in 1897. Relationship with the university was canceled in June, 1912, and was restored in March, 1913, when the present title was assumed. Coeducational since 1898. Two years of collegiate work is required for admission. The curriculum covers four years of thirty-two weeks each, and a year of internship in an approved hospital. The B.S. degree in medicine is conferred at the end of the second year. The faculty is composed of 118 of professorial rank and 249 associates, instructors and assistants, a total of 367. The tuition is $150 a year for students who are residents of Illinois; $225 a year for nonresident students. The total registration for 1935-1936 was 637; graduates 144. The next session begins Sept. 28, 1936, and ends June 11, 1937. The Dean is David John Davis, M.D.

THE UNIVERSITY OF CHICAGO MEDICAL SCHOOLS.—The Medical Schools include (a) The School of Medicine of the Division of Biological Sciences and (b) Rush Medical College, both of which are organized within the Division of Biological Sciences. The first two years of the medical course for both are given in the School of Medicine of the Division of Biological Sciences on the University Quadrangles and the last two years are given either in the School of Medicine on the University Quadrangles or in Rush Medical College on the West Side.

The School of Medicine of the Division of Biological Sciences, Fifty-Ninth Street and Ellis Avenue.—Organized in 1924. The work of the first two years of the medical course has been given on the Quadrangles since 1899, in cooperation with Rush Medical College, and that of the third and fourth clinical years has been given since 1924 with the organization of this medical school and the construction on the Quadrangles of the University hospitals and clinics. Coeducational. The faculty is composed of 98 professors, 132 associates, instructors and others, a total of 230. The requirements for admission are three years of collegiate work. The B.S. degree in medicine is conferred at the end of the second year. The curriculum covers twelve quarters of work. Students are admitted at the beginning of the autumn quarter. The tuition fee for each of the four years is $450. Total registration for 1935-1936 was 311, graduates, 40. The next session begins Oct. 1, 1936, and ends June 16, 1937.

Rush Medical College, 1758 West Harrison Street.—Chartered in 1837; held first class in 1843. First class graduated in 1844. In 1887 the college became the medical department of Lake Forest University, retaining, however, its self-government. This relation was dissolved in April, 1898, and in the same month affiliation with the University of Chicago was established. Coeducational since 1898. Since that time the work of the first two years has been given on the University Quadrangles. In May, 1924, by a new contract, the University of Chicago took over the work of Rush Medical College as a department of the University. Thereafter only clinical work has been offered by Rush Medical College. Since 1914 the course has included a fifth year consisting of a hospital internship or of a fellowship in one of the departments. Three years of collegiate work is required for admission. The year is divided into four quarters of twelve weeks each; the completion of the work of three of these quarters gives credit for a college year. The faculty is composed of 139 professors, 149 associates, instructors and others, a total of 288. The tuition fee is $375 a year until 1938. Effective Autumn 1938 it will be increased to $450 for juniors and in Autumn 1939 for juniors and seniors. Total registration for 1935-1936 was 321; graduates, 149. The next session begins Oct. 1, 1936, and ends June 16, 1937. The school is in session all year except the month of September.

All correspondence relating to general policies should be addressed to W. H. Taliaferro, Ph.D., Dean of the Division of Biological Sciences, or to A. C. Bachmeyer, M.D., Associate Dean of the Division; that relating to Rush Medical College should be addressed to Emmet B. Bay, M.D., Associate Dean of the Division of Biological Sciences (Rush Medical College); and that pertaining to student questions should be addressed to B. C. H. Harvey, M.D., Dean of Students.

INDIANA

Bloomington-Indianapolis

INDIANA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1903 but did not give all the work of the first two years of the medical course until 1905. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1905 by the merger of the Medical College of Indiana (organized in 1878), the Central College of Physicians and Surgeons (organized in 1879), and the Fort Wayne College of Medicine (organized in 1879) merged into it. The first class was graduated in 1908. Coeducational since organization. The faculty consists of 270 professors, lecturers, associates and assistants. Three years of collegiate work is required for admission. The B.S. degree in medicine is conferred. The work of the first year is given at Bloomington and the work of the next three years at Indianapolis. The regular fee for the medical course for all four years is $205 a year for residents of Indiana, and $410 for nonresidents. The total registration for 1935-1936 was 432; graduates, 108. The next session begins Sept. 15, 1936, and ends June 14, 1937. The Dean at Bloomington is Burton D. Myers, M.D., and the Dean at Indianapolis is Willis Dew Gatch, M.D.

IOWA

Iowa City

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, University Campus.—Organized in 1869. First session began in 1870. First class graduated in 1871. Absorbed Drake University College of Medicine in 1913. Coeducational since 1870. The faculty is made up of 46 professors, 63 lecturers, demonstrators and assistants, a total of 109. Two years of collegiate work is required for admission. The B.S. degree in medicine is conferred. The course of study covers four years of thirty-four weeks each. The tuition fee is $192 each year for residents of Iowa and $456 for nonresidents. Total registration for 1935-1936 was 393; graduates, 94. The next session begins Sept. 21, 1936, and ends June 7, 1937. The Dean is Ewen Murchison MacEwen, M.D.

KANSAS

Lawrence-Kansas City

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE.—Organized in 1880. It offered only the first two years of the medical course until 1905, when it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. Absorbed Kansas Medical College in 1913. First class graduated in 1906. The clinical courses are given at Kansas City. Coeducational since 1880. The faculty includes 59 professors and 136 instructors, assistants and others, a total of 195. The requirement for admission is two years of collegiate work. The B.S. degree in medicine is conferred at the end of the second year. The course covers four years of nine months each. The total fees for residents of the state for each of the four years are, respectively, $126, $113, $117 and $120. For nonresidents the fees are $168, $174, $205 and $207. The total registration for 1935-1936 was 295; graduates, 72. The next session begins Sept. 17, 1936, and ends June 7, 1937. The Dean is H. R. Wahl, M.D., Kansas City.

KENTUCKY

Louisville

UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE, First and Chestnut Streets.—Organized in 1837 as Louisville Medical Institute. The first class graduated in 1838, and a class graduated each subsequent year except 1863. In 1846 the name was changed to University of Louisville Medical Department. In 1907 it absorbed the Kentucky University Medical Department; in 1908, the Louisville Medical College, the Hospital College of Medicine and the Kentucky School of Medicine. In 1922 it changed its name to the University of Louisville School of Medicine. Coeducational since organization. Two years of collegiate work is the minimum requirement for admission. The faculty numbers 72 professors and 85 assistants, instructors and others, a total of 157. Course covers four years of thirty-two weeks each, exclusive of vacations and examinations. Fees for four years are, respectively, $404, $404, $409 and $419. Total registration for 1935-1936 was 342; graduates, 87. The next session begins Sept. 17, 1936, and ends June 5, 1937. The Dean is John Walker Moore, M.D.

LOUISIANA

New Orleans

LOUISIANA STATE UNIVERSITY MEDICAL CENTER, 1542 Tulane Avenue.—Organized January, 1931. Coeducational. First session October, 1931, with students of first and third years. Faculty comprises 30 professors and 129 assistant professors, instructors and assistants, a total of 159. Course covers four years of no less than 32 weeks each and one year of general rotation or laboratory internship in approved hospital. A minimum of three years' collegiate work is required for admission. Total fees, $92 each year for residents of Louisiana; additional tuition of $300 each year for nonresidents. Total registration for 1935-1936 was 315; graduates, 49. The next session begins Sept. 14, 1936, and ends May 29, 1937. The Dean is Arthur Vidrine, M.D.

TULANE UNIVERSITY OF LOUISIANA SCHOOL OF MEDICINE, 1430 Tulane Avenue.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years except 1863-1865, inclusive. It was transferred to the Medical Department of the University of Louisiana in 1847, and became the Medical Department of the Tulane University of Louisiana in 1884. Present title in 1913. Coeducational since 1915. The faculty comprises 30 professors and 136 associate and assistant professors, instructors and assistants, a total of 166. The course covers four years of thirty-two weeks each. A minimum of two years of collegiate work is required for admission. Total fees for each of the four years, respectively, are $350, $340, $330 and $360. The total registration for 1935-1936 was 470; graduates, 112. The next session begins Sept. 25, 1936, and ends June 9, 1937. The Dean is Charles Cassedy Bass, M.D.

MARYLAND

Baltimore

JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE, Washington and Monument Streets.—Organized in 1887. Offered preliminary course only until 1893. The first class graduated in 1897. Coeducational since organization. The faculty consists of 69 professors and 312 instructors, assistants and others, a total of 381. The requirement for admission is a collegiate degree. The course extends over four years of eight and one-half months each. The total fees for each year are, respectively, $621, $620, $620 and $620. Total registration for 1935-1936 was 271; graduates, 66. The next session begins Sept. 29, 1936, and ends June 8, 1937. The Dean is Alan M. Chesney, M.D.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, Lombard and Greene Streets.—Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. Baltimore Medical College was merged with in in 1913. In 1915 the College of Physicians and Surgeons of Baltimore was merged and the present name assumed. Coeducational since 1918. The faculty consists of 46 professors, 66 associate and assistant professors, and 178 instructors and assistants, a total of 290. Two years of collegiate work is required for admission. The course covers four years of eight months each. The fees for the four years, respectively, are: $435, $425, $425 and $440 for residents of the state; for nonresidents the fees are $200 additional each year. Total registration for 1935-1936 was 414; graduates, 97. The next session begins Sept. 22, 1936, and ends June 5, 1937. The Dean is J. M. H. Rowland, M.D.

MASSACHUSETTS

Boston

BOSTON UNIVERSITY SCHOOL OF MEDICINE, 80 East Concord Street.—Organized in 1873 as a homeopathic institution. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The first class was graduated in 1874. Become nonsectarian in 1918. Coeducational since organization. Three years of collegiate work is required for admission. The faculty includes 26 professors, 148 associates and others, a total of 174. The course covers four years. Total fees for each of the four years, respectively, are $426, $421, $421 and $435. Total registration for 1935-1936 was 248; graduates, 63. The next session begins Sept. 24, 1936, and ends June 14, 1937. The Dean is Alexander S. Begg, M.D.

HARVARD UNIVERSITY MEDICAL SCHOOL, 25 Shattuck Street.—Organized in 1782. The first class graduated in 1788. It has a faculty of 147 professors and 356 other instructors and assistants, a total of 503. Two years of collegiate work is required for admission. The total fee for each of the four years is $400, plus $5 the first year for matriculation. The total registration for 1935-1936 was 529; graduates, 134. The next session begins Sept. 28, 1936, and ends June 24, 1937. The Dean is Charles Sidney Burwell, M.D.

TUFTS COLLEGE MEDICAL SCHOOL, 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. Coeducational since 1894. It has a faculty of 69 professors and 273 assistants, lecturers and others, a total of 342. A bachelor's degree is required for admission. The course covers four years of eight months each. The total fees for each of the four years are $412, $407, $407 and $417. Total registration for 1935-1936 was 474; graduates, 115. The next session begins Sept. 23, 1936, and ends June 14, 1937. The Dean is A. Warren Stearns, M.D.

MICHIGAN

Ann Arbor

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL.—Organized in 1850 as the University of Michigan Department of Medicine and Surgery. The first class graduated in 1851. Present title assumed in 1915. Coeducational since 1870. It has a faculty of 26 professors, 13 associate professors, 28 assistant professors, 152 assistants, instructors and lecturers; a total of 219. The entrance requirements are ninety semester hours. The curriculum covers four years of nine months each. The total fees for Michigan students are $220 for each of the four years, respectively; for nonresidents, $350 a year. The total registration for 1935-1936 was 481; graduates, 117. The next session begins Sept. 28, 1936, and ends June 19, 1937. The Dean is A. C. Furstenberg, M.D.

Detroit

WAYNE UNIVERSITY COLLEGE OF MEDICINE, 1516 St. Antoine Street.—Organized as the Detroit College of Medicine in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. Reorganized with the title of Detroit College of Medicine and Surgery in 1913. The first class graduated in 1886. In 1918 it became a municipal institution under the control of the Detroit Board of Education. In 1934 the name was changed by the action of the Detroit Board of Education to Wayne University College of Medicine, as a part of the program of consolidation of the Detroit City Colleges into a university system. Coeducational since 1917. Entrance requirement is an academic degree or 90 semester hours of academic credit with "combined degree" guaranteed by school of arts and sciences. The faculty consists of 31 professors, 159 lecturers and others, a total of 190. The course covers four years of nine months each and a fifth year of intern work. The total fees for each of the first four years are, for Wayne County residents, $283; for nonresidents who reside in Michigan, $383, and for nonresidents from outside the state, $408. For the fifth or intern year the resident student fee is $50; the nonresident fee is $85. The total registration for 1935-1936 was 300; graduates, 71. The next session begins Sept. 24, 1936, and ends June 19, 1937. The Dean is Raymond B. Allen, M.D.

MINNESOTA

Minneapolis

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL.—Organized in 1883 as the University of Minnesota College of Medicine and Surgery, reorganized in 1888 by absorption of St. Paul Medical College and Minnesota Hospital College. The first class graduated in 1889. In 1908 the Minneapolis College of Physicians and Surgeons, organized in 1883, was merged. In 1909 the Homeopathic College of Medicine and Surgery was merged. Present title in 1913. Coeducational since organization. The faculty includes 90 professors and 238 instructors, a total of 328. The curriculum covers four years of nine months each, and a year's internship in an approved hospital. The school is operated on the four-quarter plan. The entrance requirements are two years of university work, which must include six semester credits of rhetoric, eight semester credits of physics; thirteen credits of general chemistry, qualitative and quantitative analysis and organic chemistry, eight credits of zoology, and a reading knowledge of scientific German, with a "C" average in all subjects and in the sciences. Students are required to meet the requirements for a degree of B.S. or B.A. before receiving the degree of Bachelor of Medicine (M.B.) which is granted at the end of the four-year course. The M.D. degree is conferred after a year of intern work, of advanced laboratory work, or of public health work has been completed. Students are graduated at the end of any quarter in which work is completed and examinations passed. Total fees are $243 for residents and $318 for nonresidents, each year of three quarters. The total registration for 1935-1936 was 503; graduates, 126. The next session begins Sept. 28, 1936, and ends June 14, 1937. The Dean is Harold S. Diehl, M.D.

MISSISSIPPI

University

UNIVERSITY OF MISSISSIPPI SCHOOL OF MEDICINE.—Organized in 1903. Coeducational since organization. Gives only the first two years of the medical course. A clinical department was established at Vicksburg in 1908 but was discontinued in 1910 after graduating one class. The session extends over eight and one-half months. Entrance requirement is three years of collegiate work. The B.S. degree in medicine is conferred at the end of the second year. The faculty includes 8 professors, 1 assistant professor and 9 instructors, assistants and others, a total of 18. The total fees for the first year are $338, and for the second

V 10
1936

year $345. The nonresident fee is $50 additional per year. The total registration for 1935-1936 was 19. The next session begins Sept. 18, 1936, and ends May 31, 1937. The Dean is B. S. Guyton, M.D.

MISSOURI

Columbia

UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE.—Organized at St. Louis in 1845; was discontinued in 1855 but was reorganized at Columbia in 1872. Teaching of the clinical years was suspended in 1909. Coeducational since 1872. The faculty includes 13 professors and 16 assistant professors, lecturers and others, a total of 29. The entrance requirements are 90 semester hours of collegiate work. The B.S. degree in medicine is conferred at the end of the second year. Total fees for the first year are $182, for the second, $200. Nonresidents of the state pay $25 per semester extra. Total registration for 1935-1936 was 80. The next session begins Sept. 14, 1936, and ends June 9, 1937. The Dean is Dudley S. Conley, M.D.

St. Louis

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, 1402 South Grand Boulevard.—Organized in 1901 as the Marion-Sims-Beaumont Medical College by union of Marion-Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. First class graduated in 1902. It became the Medical School of St. Louis University in 1903. The faculty is composed of 76 professors and 244 instructors and assistants, a total of 320. The requirement for admission is a qualitative standard of two years of collegiate study in the customary subjects, but applicants presenting meritorious credit in excess of the two year minimum are accepted by preference. The B.S. degree in medicine is conferred at the end of the second year. The curriculum covers four years of thirty-two weeks each. The summer is optional and offers courses academically equivalent to those in the regular session. The total fees for the four years, respectively, are $425, $420, $420 and $455. The total registration for 1935-1936 was 504; graduates, 116. The next session begins Sept. 17, 1936, and ends June 1, 1937. The Dean is Alphonse M. Schwitalla, S.J., Ph.D.

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, Kingshighway and Euclid Avenue.—Organized in 1842 as the Medical Department of St. Louis University. The first class graduated in 1843. In 1855 it was chartered as an independent institution under the name of St. Louis Medical College. In 1891 it became the Medical Department of Washington University. In 1899 it absorbed the Missouri Medical College. Coeducational since 1918. The faculty comprises 107 professors and 203 lecturers, instructors and others, a total of 310. Four years of collegiate work is required for admission. The B.S. degree in medicine is conferred at the end of the third or fourth year. The course is four years of eight months each. The total fees for the four years are, respectively, $425, $419, $419 and $424. The total registration for 1935-1936 was 355; graduates, 96. The next session begins Sept. 24, 1936, and ends June 8, 1937. The chairman of the Administrative Committee is David P. Barr, M.D.

NEBRASKA

Omaha

CREIGHTON UNIVERSITY SCHOOL OF MEDICINE, 306 North Fourteenth Street.—Organized in 1892 as the John A. Creighton Medical College. The first class graduated in 1893. Present title in 1921. Coeducational since organization. It has a faculty of 67 professors and 70 instructors, lecturers and assistants, a total of 137. Two years of collegiate work required for admission. The B.S. degree in medicine is conferred at the end of the second year. The curriculum covers four years of eight months each. The total fees each year for the four years are, respectively, $393, $393, $348 and $356. Total registration for 1935-1936 was 287; graduates, 77. The next session begins Sept. 22, 1936, and ends June 3, 1937. The Dean is Bryan M. Riley, M.D.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Forty-Second Street and Dewey Avenue.—Organized in 1881 as the Omaha Medical College. The first class graduated in 1882. It became the Medical Department of Omaha University in 1891. In 1902 it affiliated with the University of Nebraska, with the present title. The instruction of the first two years was given at Lincoln and of the last two at Omaha until 1913, when the work of all four years was transferred to Omaha. Coeducational since 1882. The faculty is composed of 64 professors and 60 lecturers and instructors, a total of 124. Sixty-five semester hours of collegiate work is required for admission. The B.S. degree in medicine is conferred at the end of the second year. The fees for each of the four years, respectively, are $219, $214, $214 and $214. Total registration for 1935-1936 was 328; graduates, 70. The next session begins Sept. 21, 1936, and ends June 7, 1937. The Dean is C. W. M. Poynter, M.D.

NEW HAMPSHIRE

Hanover

DARTMOUTH MEDICAL SCHOOL.—Organized by Dr. Nathan Smith in 1797. The first class graduated in 1798. It is under the control of the trustees of Dartmouth College. Courses of the third and fourth year were discontinued in 1914. The faculty consists of 16 professors and 10 instructors, a total of 26. Three years of collegiate work is required for admission. The course covers nine calendar months in each year, or eight months of actual teaching. Candidates for the A.B. degree in Dartmouth College may substitute the work of the first year in medicine for that of the senior year in the academic department. The fees for the first year are $410 and $400 for the second year. The total registration for 1935-1936 was 43. The next sesion begins Sept. 17, 1936, and ends June 11, 1937. The Dean is John P. Bowler, M.D.

NEW YORK

Albany

ALBANY MEDICAL COLLEGE, 47 New Scotland Avenue.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. In 1915, Union University assumed educational control. Coeducational since 1915. The faculty is composed of 28 professors and 63 instructors, assistants and others, a total of 91. A collegiate degree is required for admission. The curriculum covers four years of eight months each. The total fees for four years, respectively, are $445, $420, $405 and $405. The total registration for 1935-1936 was 100; graduates, 25. The next session begins Sept. 28, 1936, and ends June 14, 1937. The Dean is Thomas Ordway, M.D.

Brooklyn

LONG ISLAND COLLEGE OF MEDICINE, 350 Henry Street.—Organized in 1858 as the Long Island College Hospital. The first class graduated in 1860 and the last class in 1930. Reorganized with a new charter in 1930 as the present institution. The first class graduated in 1931. Coeducational. It has a faculty of 123 professors, associate, assistant, clinical and assistant clinical professors, and 175 lecturers, associates, instructors, assistants and others, a total of 298. Seventy-two semester hours of collegiate work is required for admission. The course covers four years (first, second and fourth years of eight months each, and the third year of nine months). The total fee for each of the four years is $610. Total registration for 1935-1936 was 383; graduates, 104. The next session begins Sept. 28, 1936, and ends June 3, 1937. The Acting Dean is Wade W. Oliver, M.D.

Buffalo

UNIVERSITY OF BUFFALO SCHOOL OF MEDICINE, 24 High Street.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. Coeducational since organization. The faculty is composed of 91 professors and 164 associates, assistants and others, a total of 255. Two years of collegiate work is required for admission. The course covers four years of eight months each. The total fees for each of the four years are, respectively, $530, $525, $520 and $530. Total registration for 1935-1936 was 268; graduates, 62. The next session begins Sept. 28, 1936, and ends June 5, 1937. The Dean is Edward W. Koch, M.D.

Ithaca-New York

CORNELL UNIVERSITY MEDICAL COLLEGE, York Avenue and Sixty-Ninth Street, New York.—Organized in 1898. The work of the first year may be taken either in Ithaca or New York. Coeducational since organization. The faculty is composed of 115 professors and 269 assistants, lecturers, instructors and others, a total of 384. All candidates for admission must be graduates of approved colleges or scientific schools or seniors of approved colleges that will permit them to substitute the first year of this medical school for the fourth year of their college course and will confer on them the bachelor degree on the completion of the first year's work. The fees for each of the four years are, respectively, $510, $500, $510 and $525. Total registration for 1935-1936 was 286; graduates, 64. The next session begins Sept. 28, 1936, and ends June 16, 1937. The Dean is William S. Ladd, M.D.

New York

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, 630 West One Hundred and Sixty-Eighth Street.—The medical faculty of Columbia College, then known as King's College, was organized in 1767. Instruction was interrupted by the War of the Revolution. The faculty was reestablished in 1792 and merged in 1814 with the College of Physicians and Surgeons, which had received an independent charter in 1807. In 1860 the College of Physicians and Surgeons became the Medical Department of Columbia College. This merger became permanent by legislative enactment in 1891. Columbia College became Columbia University in 1896. The medical school has been coeducational since 1917. The faculty is composed of 190 professors and 316 instructors, demonstrators and others, a total of 506. Three years of collegiate work is required for admission. The work covers four years of eight months each. The total fees for the four years, respectively, are $545, $530, $530 and $550. Total registration for 1935-1936 was 392; graduates, 85. The next session begins Sept. 17, 1936, and ends June 1, 1937. The Dean is Willard C. Rappleye, M.D.

NEW YORK MEDICAL COLLEGE AND FLOWER HOSPITAL, 450 East Sixty-Fourth Street.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College of the State of New York. The title New York Homeopathic Medical College was assumed in 1869; the title New York Homeopathic Medical College and Flower Hospital in 1908; present title May 11, 1936. The first class graduated in 1861. Coeducational since 1919. Two years of collegiate work is required for admission. The course covers four years of eight months each. It has a faculty of 64 professors and associate professors, 21 assistant professors and 188 lecturers and assistants, a total of 273. The total fees for the four years are, respectively, $540, $530, $530 and $560. Total registration for 1935-1936 was 315; graduates, 77. The next session begins Sept. 14, 1936, and ends June 8, 1937. The Dean is Claude A. Burrett, M.D.

NEW YORK UNIVERSITY COLLEGE OF MEDICINE, 477 First Avenue.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. Named University and Bellevue Hospital Medical College from 1898 to February 1935 when it was changed to New York University College of Medicine. First class graduated in 1899. Coeducational since 1919. The faculty is composed of 137 professors, associate, assistant, clinical and assistant clinical professors, and 299 lecturers,

instructors and others, a total of 436. The course covers four years. Entrance requirements are that all candidates must be graduates of approved colleges or scientific schools, or seniors in good standing in approved colleges or scientific schools on condition that their faculty will permit them to substitute the first year in the New York University College of Medicine for the fourth year of their college course and will confer the bachelor's degree on the satisfactory completion of the year's work. The fees for each of the four years is $600. The next session begins Sept. 16, 1936, and ends June 9, 1937. Total registration for 1935-1936 was 521; graduates, 131. The Dean is John Wyckoff, M.D.

Rochester

UNIVERSITY OF ROCHESTER SCHOOL OF MEDICINE, Elmwood Avenue and Crittenden Boulevard.—Organized in 1925 as the Medical Department of the University of Rochester. Coeducational since organization. The faculty is composed of 60 professors, 169 lecturers, assistants, instructors and others, a total of 229. The work embraces a graded course of four years of nine months each. Three years of collegiate work is required for admission. The total fees for each year are $400. The total registration for 1935-1936 was 168; graduates, 42. The next session begins Sept. 21, 1936, and ends June 19, 1937. The Dean is George Hoyt Whipple, M.D.

Syracuse

SYRACUSE UNIVERSITY COLLEGE OF MEDICINE, 309-311 South McBride Street.—Organized in 1872, when the Geneva Medical College, chartered in 1834, was removed to Syracuse, under the title "The College of Physicians and Surgeons of Syracuse University." Present title assumed in 1875, when a compulsory three-year graded course was established. The first class graduated in 1873 and a class graduated each subsequent year. In 1889 the amalgamation with the university was made complete. Course extended to four years in 1896. Coeducational since organization. The faculty is composed of 46 professors and 149 associate and assistant professors, lecturers and instructors, a total of 195. Two years of a recognized college course is required for admission. The course covers four years of thirty-four weeks each. The fee for each of the first three years is $500; for the fourth year, $510. The total enrolment for 1935-1936 was 174; graduates, 45. The next session begins Sept. 24, 1936, and ends May 31, 1937. The Dean is H. G. Weiskotten, M.D.

NORTH CAROLINA

Chapel Hill

UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. A class was graduated each subsequent year, including 1910, when the clinical department at Raleigh was discontinued. Coeducational since 1914. Three years of collegiate work is required for admission. The B.S. degree in medicine is conferred at the end of the first year. The faculty is composed of 12 professors and 4 instructors, a total of 16. The fees for each year are $250 for residents; nonresidents, an additional fee of $100. The total registration for 1935-1936 was 74. The next session begins Sept. 17, 1936, and ends June 8, 1937. The Dean is C. S. Mangum, M.D.

Durham

DUKE UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1925. The first class was admitted, Oct. 1, 1930. Coeducational. The faculty is composed of 10 professors and 87 associate and assistant professors, lecturers, instructors and assistants, a total of 97. The entrance requirements are seventy hours of collegiate work. The academic year consists of four quarters of eleven weeks each. Students either may study four quarters each year after the first year, and if satisfactory will receive the M.D. certificate after three and one quarter calendar years, or three quarters in each year, and if satisfactory will be graduated after four calendar years. The B.S. degree in medicine is conferred after six quarters. Students are urged to spend three years in hospital or laboratory work after graduation and must give assurance satisfactory to the executive committee that they will spend at least two years. The fees are $450 for each year of three quarters. Total registration for 1935-1936 was 219; graduates, 38. The next session begins Oct. 5, 1936, and ends June 12, 1937. The Dean is Wilburt C. Davison, M.D.

Wake Forest

WAKE FOREST COLLEGE SCHOOL OF MEDICINE.—Organized in 1902. The faculty numbers 11 professors, 5 instructors and 8 undergraduate assistants. Ninety semester hours of collegiate work are required for admission. Each annual course extends over nine months. The fees for each of the first two years are $300. The total registration for 1935-1936 was 56. The next semester begins Sept. 15, 1936, and ends June 1, 1937. The Dean is C. C. Carpenter, M.D.

NORTH DAKOTA

Grand Forks

UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE.—Organized in 1905. Offers only the first two years of the medical course. Coeducational since organization. Three years' work in a college of liberal arts is required for admission. The B.S. degree in medicine is conferred at the end of the second year. The faculty consists of 5 professors and 8 instructors, a total of 13. The fees are $75 each year for resident students and $165 for nonresidents. The total registration for 1935-1936 was 59. The next session begins Sept. 15, 1936, and ends June 8, 1937. The Dean is H. E. French, M.D.

OHIO

Cincinnati

UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE, Eden and Bethesda Avenues.—Organized in 1909 by the union of the Medical College of Ohio (founded in 1819) with the Miami Medical College (founded in 1852). The Medical College of Ohio became the Medical Department of the University of Cincinnati in 1896. Under a similar agreement, March 2, 1909, the Miami Medical College also merged into the University, when the title of Ohio-Miami Medical College of the University of Cincinnati was taken. Present title assumed in 1915. Coeducational since organization. Candidates for admission to the freshman class must present three years of college preparation of not less than ninety hours. The B.S. degree in medicine is conferred at the end of the first year. The faculty consists of 126 professors and 266 associates, assistants, etc., a total of 392. The course covers four years of eight months each. A year's internship in an approved hospital is also required. The total fees for the four years are, respectively, $360, $365, $360 and $370, and if not legal citizens of Cincinnati, $50 additional. The total registration for 1935-1936 was 286; graduates, 66. The next session begins Sept. 21, 1936, and ends June 4, 1937. The Dean is Alfred Friedlander, M.D.

Cleveland

WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE, 2109 Adelbert Road.—Organized in 1843 as the Cleveland Medical College. The first class graduated in 1844. It assumed the present title in 1882. In 1910 the Cleveland College of Physicians and Surgeons was merged. Coeducational since 1919. The faculty includes 75 professors and 194 lecturers, assistants and others, a total of 269. The curriculum covers three years of nine months each and one year of ten months. Three years of collegiate work is required for admission. The total fees for each of the four years are, respectively, $446, $433, $415 and $425. The total registration for 1935-1936 was 261; graduates, 57. The next session begins Sept. 24, 1936, and ends June 16, 1937. The Dean is Torald Sollmann, M.D.

Columbus

OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, Neil and Eleventh Avenues.—Organized in 1907 as the Starling-Ohio Medical College by the union of Starling Medical College (organized in 1847 by charter granted by the State Legislature changing the name from Willoughby Medical College, which was chartered March 3, 1834) with the Ohio Medical University (organized 1890). In 1914 it became an integral part of the Ohio State University with its present title. Coeducational since organization. The faculty consists of 51 professors, associate and assistant professors, 95 lecturers, instructors, demonstrators and others, a total of 146. Three years of collegiate work is required for admission. The course covers four years of thirty-four weeks each. Tuition fees are $246, $231, $231 and $231 each year, respectively, for residents of Ohio, and $150 additional for nonresidents. The total registration for 1935-1936 was 381; graduates, 92. The next session begins Sept. 29, 1936, and ends June 14, 1937. The Dean is J. H. J. Upham, M.D.

OKLAHOMA

Oklahoma City

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE.—Organized in 1900. Gave only the first two years of the medical course at Norman until 1910, when a clinical department was established at Oklahoma City. The first class graduated in 1911. Coeducational since organization. Since September, 1928, the entire course has been given at Oklahoma City. It has a faculty of 30 professors, 24 associate professors, 17 assistant professors, 8 associates, 4 lecturers, 53 intructors and 13 assistants, a total of 149. Two years of collegiate work is required for admission. The B.S. in Medicine degree is conferred at the end of the second year. The course covers four years of nine months each. The total fees for the four years are, respectively, $128, $85, $48 and $58. For students residing outside the state of Oklahoma there is an additional fee of $200 a year. The total registration for 1935-1936 was 240; graduates 58. The next session begins Sept. 14, 1936, and ends June 7, 1937. The Dean is Robert U. Patterson, M.D.

OREGON

Portland

UNIVERSITY OF OREGON MEDICAL SCHOOL, Marquam Hill.—Organized in 1887. The first class graduated in 1888, and a class graduated each subsequent year except 1898. The Willamette University Medical Department was merged in 1913. Coeducational since organization. It has a faculty of 71 professors and 190 lecturers, assistants and others, a total of 261. Entrance requirements are three years of collegiate work. The course covers four years of thirty-three weeks each. The total fees for the four years are, respectively, $260, $255, $250 and $250 for residents of Oregon, and $60 a year additional for nonresidents. The total registration for 1935-1936 was 234; graduates, 55. The next session begins Oct. 5, 1936, and ends June 10, 1937. The Dean is Richard B. Dillehunt, M.D.

PENNSYLVANIA

Philadelphia

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF PHILADELPHIA, 235 North Fifteenth Street.—Organized in 1848 as the Homeopathic Medical College of Pennsylvania. In 1869 it united with the Hahnemann Medical College of Philadelphia, taking the latter title. Assumed present title in 1885. The first class graduated in 1849. Two years of collegiate

V 10
1936

work is required for admission. It has a faculty of 77 professors and 126 lecturers, instructors and others, in all, 203. The work covers four years of eight and one-half months each. Fees for each of the four years are, respectively, $455, $427, $427 and $450. The total registration for 1935-1936 was 524; graduates, 98. The next session begins Sept. 28, 1936, and ends June 10, 1937. The Dean is William A. Pearson, Ph.D.

JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA, 1025 Walnut Street.—Organized in 1825 as the Medical Department of Jefferson College, Canonsburg, Pa. It was chartered with its present title in 1838. Classes have been graduated annually beginning 1826. In 1838 a separate university charter was granted without change of title, since which time it has continued under the direction of its own board of trustees. It has a faculty of 70 professors, associate and assistant professors and 172 associates, lecturers, demonstrators and instructors, a total of 242. Four years of college work and a bachelor's degree are required for admission. The course of study covers four years of eight and one-half months each. The total fees for the four years, are respectively, $445, $435, $425 and $425. The total registration for the 1935-1936 was 533; graduates, 133. The next session begins Sept. 21, 1936, and ends June 4, 1937. The Dean is Ross V. Patterson, M.D.

TEMPLE UNIVERSITY SCHOOL OF MEDICINE, Broad and Ontario Streets.—Organized in 1901. The first class graduated in 1904. Coeducational since organization. The faculty numbers 34 professors and 208 associates, assistants and others, a total of 242. Three years of collegiate work is required for admission. The fees for each of the four years, respectively, are $485, $455, $435 and $455. The total registration for 1935-1936 was 465; graduates, 124. The next session begins Sept. 23, 1936, and ends June 10, 1937. The Dean is William N. Parkinson, M.D.

UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE, Thirty-Sixth and Pine Streets.—Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772 and 1775-1779, inclusive. The original title was the Department of Medicine, College of Philadelphia. The present title was adopted in 1909. It granted the first medical diploma issued in America. In 1916 it took over the Medico-Chirurgical College of Philadelphia to develop it as a graduate school. Coeducational since 1914. The faculty consists of 93 professors, associate and assistant professors, and 310 lecturers, associates, instructors and others, a total of 403. Three years of collegiate work is required for admission. The course covers four years of thirty-three weeks each. The tuition fee is $500 each year, with a deposit fee of $15, a student health fee of $10 and a matriculation fee of $5. Total registration for 1935-1936 was 515; graduates, 140. The next session begins Sept. 28, 1936, and ends June 9, 1937. The Dean is William Pepper, M.D.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Henry Avenue and Abbottsford Road, East Falls.—Organized in 1850. Classes were graduated in 1852 and in all subsequent years except 1862. It has a faculty of 49 professors and 63 assistants, lecturers and others, in all, 112. Three years of collegiate work is required for admission. The curriculum covers four years of eight months each. Total fees for each of the four years are, respectively, $440, $433, $433 and $455. The total registration for 1935-1936 was 116; graduates, 33. The next session begins Sept. 23, 1936, and ends June 2, 1937. The Dean is Martha Tracy, M.D.

Pittsburgh

UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, Bigelow Boulevard.—Organized in 1886, as the Western Pennsylvania Medical College and in 1908 became an integral part of the University of Pittsburgh, removing to the university campus in 1910. The first class graduated in 1887. Coeducational since 1899. The faculty is composed of 27 professors and 253 associates, assistants and others, 280 in all. Entrance requirements are two years of collegiate work. The course of study is four years of eight and one-half months each. The total fees for the four years, respectively, are $500, $500, $400 and $415. The total registration for 1935-1936 was 252; graduates, 60. The next session begins Sept. 21, 1936, and ends June 9, 1937. The Dean is R. R. Huggins, M.D.

SOUTH CAROLINA

Charleston

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA, 16 Lucas Street.—Organized in 1823 as the Medical College of South Carolina. The first class graduated in 1825. In 1832 a medical college bearing the present title was chartered and the two schools continued as separate institutions until they were merged in 1838. Classes were graduated in all years except 1862 to 1865, inclusive. In 1913, by legislative enactment, it became a state institution. Coeducational from 1895 to 1912, when privileges for women were withdrawn, being restored in 1917. It has a faculty of 37 professors and 38 lecturers, instructors and others, a total of 75. The course covers four years of eight months each. Two years of collegiate work is required for admission. The total fees are $270 each year. Fees for nonresidents of the state, $420 each year. Total enrolment for 1935-1936 was 160; graduates, 32. The next session begins Sept. 24, 1936, and ends June 3, 1937. The Dean is Robert Wilson, M.D.

SOUTH DAKOTA

Vermilion

UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE.—Organized in 1907. Coeducational since organization. Offers only the first two years of the medical course. Two years' work in a college of liberal arts is required for admission. The B.S. degree in medicine is conferred at the end of the second year. The faculty numbers 11. The fees are $100 each year for residents and $200 for nonresidents. The total registration for 1935-1936 was 54. The next session begins Sept. 16, 1936, and ends June 7, 1937. The Dean is J. C. Ohlmacher, M.D.

TENNESSEE

Memphis

UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE, 874 Union Avenue.—Organized in 1876 at Nashville as Nashville Medical College. First class graduated 1877, and a class graduated each subsequent year. Became Medical Department of University of Tennessee in 1879. In 1909 it united with the Medical Department of the University of Nashville to form the joint Medical Department of the Universities of Nashville and Tennesee. This union was dissolved in 1911. The trustees of the University of Nashville by formal action of that board named the University of Tennessee College of Medicine as its legal successor. In 1911 it moved to Memphis, where it united with the College of Physicans and Surgeons. The Memphis Hospital Medical College was merged in 1913. Lincoln Memorial University Medical Department was merged in 1914. Coeducational since 1911. The faculty includes 91 professors and 116 assistants, instructors and others, a total of 207. Two years of collegiate work is required for admission. The B.S. degree in medicine is conferred at the end of the second year. The fees are: for the first quarter, $136; second to sixth quarters, $116 each; seventh to ninth quarters, $111 each; tenth to twelfth quarters, $121 each. For residents of the state the charge is reduced $50 each quarter. Total registration for 1935-1936 was 429; graduates, 102. During the academic year of 1936-1937 the quarters begin July 9, Sept. 28, Jan. 4 and March 25, and end Sept. 26, Dec. 16, March 24 and June 12. The Dean is O. W. Hyman, Ph.D.

Nashville

MEHARRY MEDICAL COLLEGE, Eighteenth Avenue North and Heffernan Street.—This school was organized in 1876 as the Meharry Medical Department of Central Tennessee College, which became Walden University in 1900. First class graduated in 1877. Obtained new charter independent of Walden University in 1915. Coeducational since 1876. The faculty is made up of 25 professors and 24 instructors, demonstrators, lecturers and others, 49 in all. Two years' work in a college of liberal arts is required for admission. The curriculum covers four years of thirty-two weeks each. Tuition fees are, respectively, $270, $250, $250 and $260 each year. Total registration for 1935-1936 was 183; graduates, 32. The next session begins Oct. 1, 1936, and ends May 20, 1937. The President is John Mullowney, M.D.

VANDERBILT UNIVERSITY SCHOOL OF MEDICINE, Twenty-First Street at Edgehill.—This school was founded in 1874. The first class graduated in 1875. Coeducational since September 1925. The faculty numbers 215. For matriculation, students must be graduates of collegiate institutions of recognized standing or seniors in absentia, who will receive the bachelor degree from their college after having completed successfully at least one year of work in the school of medicine. The course covers four years of nearly nine months each. The total fees for the four years, respectively, are $315, $315, $315 and $320. The total registration for 1935-1936 was 203; graduates 52. The next session begins Sept. 23, 1936, and ends June 9, 1937. The Dean is Waller S. Leathers, M.D.

TEXAS

Dallas

BAYLOR UNIVERSITY COLLEGE OF MEDICINE, 810 College Avenue.—Organized in 1900 as the University of Dallas Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University. It acquired the charter of Dallas Medical College in 1904. Coeducational since organization. The first class graduated in 1901. The faculty consists of 69 professors and 85 instructors and assistants, a total of 154. Entrance requirements are two years of collegiate work. The course covers four years of eight months each. The fees for each of the four years, respectively, are $364, $354, $349 and $374. Total registration for 1935-1936 was 350; graduates, 79. The next session begins Oct. 1, 1936, and ends May 31, 1937. The Dean is W. H. Moursund, M.D.

Galveston

UNIVERSITY OF TEXAS SCHOOL OF MEDICINE, 912 Avenue B.—Organized in 1891. The first class graduated in 1892. Coeducational since organization. It has a faculty of 42 professors and 15 lecturers and instructors, a total of 57. The curriculum covers four years of eight months each. The entrance requirement is two years of collegiate work. The total fees for the four years, respectively, are $92, $94, $98 and $104. There is a matriculation fee of $50 for each year. Total registration for 1935-1936 was 355; graduates, 75. The next session begins Oct. 1, 1936, and ends May 31, 1937. The Dean is W. S. Carter, M.D.

UTAH

Salt Lake City

UNIVERSITY OF UTAH SCHOOL OF MEDICINE.—Organized in 1906. Coeducational since organization. Gives only first two years of medical course. Each school year covers thirty-six weeks. Three years of collegiate work is required for admission. The medical faculty consists of 7 professors and 16 lecturers and assistants, a total of 23. The fees are $228 per year. There is a nonresident fee of $25 per quarter. Total registration for 1935-1936 was 58. The next session begins Sept. 24, 1936, and ends June 5, 1937. The Dean is L. L. Daines, M.D.

VERMONT

Burlington

UNIVERSITY OF VERMONT COLLEGE OF MEDICINE, Pearl Street, College Park.—Organized with complete course in 1822. Coeducational since 1920. It has a faculty of 34 professors and 28 lecturers, instructors, preceptors and others, a total of 62. Two years of collegiate work is required for admission. The course of study covers four years of nine months each. For residents of Vermont the tuition fee is $300 each session. Nonresidents are charged an additional $75 each session. A student activity fee of $30 is charged all students not holding academic degrees or in attendance four years previously, and a $25 fee for the Doctor's degree. The total registration for 1935-1936 was 171; graduates, 41. The next session begins Sept. 17, 1936, and ends June 14, 1937. The Dean is J. N. Jenne, M.D.

VIRGINIA

Charlottesville

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE.—Organized in 1827. Coeducational since the session of 1920-1921. It has a faculty of 33 professors and 36 lecturers, instructors, assistants and others, a total of 69. Two years of collegiate work is required for admission. The B.S. degree in medicine is conferred at the end of the second year when special requirements are fulfilled. For residents of Virginia the total fees for the four years, respectively, are $379, $356, $331 and $326. Nonresidents are charged an additional $50 each year. The total registration for 1935-1936 was 245; graduates, 50. The next session begins Sept. 17, 1936, and ends June 15, 1937. The Dean is J. Carroll Flippin, M.D.

Richmond

MEDICAL COLLEGE OF VIRGINIA, Twelfth and Clay Streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. In 1913 the University College of Medicine was merged. In 1914 the North Carolina Medical College was merged. Coeducational since 1918. Classes were graduated in 1839 and in all subsequent years. It has a faculty of 61 professors and 92 lecturers, instructors and others, a total of 153. Three years of collegiate work is required for admission. The course covers four years of eight and one-half months each. Total fees for the four years, respectively, are $335, $335, $320 and $350. Nonresidents are charged an additional $125 each year. The total registration for 1935-1936 was 309; graduates, 73. The next session begins Sept. 11, 1936, and ends June 1, 1937. The Dean is Lee E. Sutton Jr., M.D.

WEST VIRGINIA

Morgantown

WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1902, gives the first two years of the medical course. Coeducational since organization. Three years of collegiate work is required for admission. The B.S. degree in medicine is conferred at the end of the second year. Session extends through nine months. Faculty numbers 24. Fees for residents of the state $254; nonresidents, $404, each year. The total registration for 1935-1936 was 66. The next session begins Sept. 14, 1936, and ends June 8, 1937. The Acting Dean is Edward J. Van Liere, M.D.

WISCONSIN

Madison

UNIVERSITY OF WISCONSIN MEDICAL SCHOOL, 412 North Charter Street.—Organized in 1907. Gave only the first two years of the medical course until 1925, when the clinical years were added. Coeducational since organization. Three years of collegiate work are required for admission. The B.S. degree in medical science is conferred at the end of the first year. It has a faculty of 64 professors and 67 lecturers, instructors and others, a total of 131. The fees for each year are, respectively, $212, $192, $165 and $110. An additional fee of $200 each year is charged nonresidents. The total registration for 1935-1936 was 307; graduates, 51. The next session begins Sept. 23, 1936, and ends June 21, 1937. The Dean is Wm. S. Middleton, M.D.

Milwaukee

MARQUETTE UNIVERSITY SCHOOL OF MEDICINE, 561 North Fifteenth Street.—Organized in December 1912, by the merger of the Milwaukee Medical College and the Wisconsin College of Physicians and Surgeons. Coeducational since organization. It has a faculty of 158. Two years of collegiate work is required for admission. The curriculum covers four years of eight and a half months each, and one year's internship in an approved hospital. The fees for the four years, respectively, are $395, $383, $383 and $368. The total registration for 1935-1936 was 306; graduates, 60. The next session begins Sept. 28, 1936, and ends June 16, 1937. The Dean is Eben J. Carey, M.D.

CANADA

Alberta

UNIVERSITY OF ALBERTA FACULTY OF MEDICINE, Edmonton.—Organized in 1913. Coeducational since organization. Has given the complete six-year medical course since 1924. The faculty includes 8 full time and 64 part time professors, instructors, assistants and others, a total of 72. Fees for the first year are $150, for the second, third and fourth years, $215; for the fifth and sixth years, $225. The registration for 1935-1936 was 194; graduates, 21. The next session begins Sept. 21, 1936, and ends April 30, 1937. The Dean is Allen Coats Rankin, M.D.

Manitoba

UNIVERSITY OF MANITOBA FACULTY OF MEDICINE, Corner of Emily and Bannatyne, Winnipeg.—Organized in 1883 as Manitoba Medical College; first class graduated in 1886, and a class graduated each subsequent year. Assumed present title in 1919. Coeducational since organization. The faculty includes 20 professors and 74 instructors and assistants, total of 104. Two years of collegiate work is required for admission. The course extends over four years of eight months each and a hospital internship. The total fees for the five years, respectively, are $266, $266, $266, $266 and $115. Total registration for 1935-1936 was 201; graduates, 56. The next session begins Sept. 21, 1936, and ends May 8, 1937. The Dean is A. T. Mathers, M.D.

Nova Scotia

DALHOUSIE UNIVERSITY FACULTY OF MEDICINE, Halifax.—Organized in 1867. First class graduated in 1872. Coeducational since 1871. It has a faculty of 24 professors and 43 demonstrators, lecturers and others, a total of 67. Requires for matriculation two years of arts. The medical course covers four years and a hospital internship of one year. The fees are $312, $312, $312, $302 and $302 for each year, respectively; $200 additional registration fee payable by students outside the British Empire. The total registration for 1935-1936 was 157; graduates, 26. The next session begins Sept. 8, 1936, and ends May 11, 1937. The Dean is H. G. Grant, M.D.

Ontario

QUEEN'S UNIVERSITY FACULTY OF MEDICINE, Kingston.—Organized 1854, first class graduated in 1855, and a class graduated each subsequent year. The faculty numbers 56. The fee for the first year is $175 and $220 for each of the other five years. The course covers six years of thirty teaching weeks each. The total registration for 1935-1936 was 318; graduates, 41. The next session begins Sept. 24, 1936, and ends May 26, 1937. The Dean is Frederick Etherington, M.D.

UNIVERSITY OF WESTERN ONTARIO MEDICAL SCHOOL, Ottawa Avenue, London.—Organized in 1881 as the Western University Faculty of Medicine; first class graduated in 1883, and a class graduated each subsequent year. Present title in 1923. The medical school has been under the control of the Board of Governors of the University of Western Ontario since 1913. Coeducational since 1913. The faculty numbers 83. The course of study covers six years of eight months each. The total fees to residents of Canada for the last four years, respectively, are $225, $225, $233 and $258. The registration for 1935-1936 was 218; graduates, 28. The next session begins Sept. 21, 1936, and ends May 15, 1937. The Dean is F. J. H. Campbell, M.D.

UNIVERSITY OF TORONTO FACULTY OF MEDICINE, Toronto.—Organized in 1843. Coeducational since 1903. The course of study covers six years of eight months each. The B.S. degree in medicine is conferred at the end of the third or sixth year. It has a faculty of 66 professors and 254 lecturers, associates and others, a total of 320. The fees are $195 for the first year; for the second, $370; $265 for the third year; $290 for the fourth and fifth years, and $322 for the sixth year. The total registration for 1935-1936 was 853; graduates, 126. The next session begins Sept. 29, 1936, and ends May 15, 1937. The Dean is W. E. Gallie, M.D.

Quebec

MCGILL UNIVERSITY FACULTY OF MEDICINE, 3640 University Street, Montreal.—Founded in 1823. Coeducational since 1919. Three years of collegiate work is required for admission. The length of the medical course is five years; beginning with the session 1936-1937 it will be four years followed by one year of internship. The faculty consists of 56 professors and 152 lecturers and others, a total of 208. The total fees for each of the five medical years are $393. The total registration for 1935-1936 was 469; graduates, 95. The next session begins Sept. 2, 1936, and ends June 1, 1937. The Dean is A. Grant Fleming, M.D.

UNIVERSITY OF MONTREAL FACULTY OF MEDICINE, 1265 St. Denis Street, Montreal.—Organized in 1843. Coeducational since 1925. The faculty numbers 122. One year of premedical college work is required for admission to a five year medical course. The total fees for each of the five years, respectively, are $253, $229, $243 and $218. The total registration for 1935-1936 was 183; graduates, 42. The next session begins Sept. 15, 1936, and ends June 15, 1937. The Dean is Télesphore Parizeau, M.D.

LAVAL UNIVERSITY FACULTY OF MEDICINE, Quebec.—Organized in 1848. The faculty numbers 88. The fees for each of the medical years are $160, $170, $160, $160 and $180 for residents of Canada. Nonresidents are charged an extra fee of $190 each year. The premedical requirement is a B.A. degree. Total registration for 1935-1936 was 265; graduates, 38. The next session begins Sept. 15, 1936, and ends May 31, 1937. The Dean is P. C. Dagneau, M.D.

Saskatchewan

UNIVERSITY OF SASKATCHEWAN SCHOOL OF MEDICAL SCIENCES, Saskatoon.—Organized in 1926. Coeducational. Offers the first two years of the medical course. Students require three more years of medicine for graduation. Two years of collegiate work is required for admission. The B.S. degree in medicine is conferred at the end of the second year. The medical faculty includes 7 professors and 3 lecturers and assistants, a total of 10. The fees are $150 for each year. The total registration for 1935-1936 was 51. The next session begins Sept. 25, 1936, and ends May 14, 1937. The Dean is W. S. Lindsay, M.B.

V 107
1936

HOSPITALS APPROVED FOR TRAINING INTERNS

The following general hospitals containing 216,494 beds are considered in position to furnish acceptable internships for medical graduates.

HOSPITALS, 705. INTERNSHIPS, 6,759

The terms used in the column "Type of Internship" are defined as follows:

1. Rotating internships include services in medicine, surgery, pediatrics, obstetrics and in the clinical and x-ray laboratories.
2. Straight internships are limited to a single field.
3. Mixed internships are those comprising more than one service but which do not include all of the six branches which constitute a rotating internship.

ABBREVIATIONS

Army	United States Army	Fed	Federal	Part	Partnership
CyCo	City and County	Frat	Fraternal	Req	Required
Corp	Corporation unrestricted as to profit	Indiv	Individual	USPHS	United States Public Health Service
		NPAssn	Nonprofit association		
		Op	Optional		

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
ALABAMA															
Hillman Hospital	Birmingham	County	474	100			12,295	Rotating	16	12	July	No	Req	26	No
Norwood Hospital	Birmingham	NPAssn	226	8	61	31	3,953	Rotating	2	12	July	No	Req	25	$25
Employees' Hospital of the Tennessee Coal, Iron and Railroad Company	Fairfield	NPAssn	310			100	6,039	Rotating	8	12	July	No	Req	45	$25
John A. Andrew Memorial Hosp.[1] (col.)	Tuskegee Institute	NPAssn	96	40	40	20	1,934	Rotating	2	12	June & Sept.	No	Req	57	$36
ARIZONA															
St. Joseph's Hospital	Phoenix	Church	190	..	..	..	5,782	Rotating	4	12	July	No	None	33	$25
ARKANSAS															
Baptist State Hospital	Little Rock	Church	300	3	28	69	3,454	Rotating	4	12	July	No	None	35	$25
Little Rock City Hospital	Little Rock	City	175	100			1,935	Mixed	5	12	July	No	Req	49	$25
St. Vincent Infirmary	Little Rock	Church	150	23	14	63	3,519	Rotating	4	12	June	No	None	15	$25
CALIFORNIA															
Fresno County General Hospital	Fresno	County	520	98	2		7,696	Rotating	10	12	July	No	Req	39	$25
Glendale Sanitarium and Hospital[1]	Glendale	Church	244	2	23	75	2,850	Mixed	4	12	July	No	Op	28	$2.50(a)
Loma Linda Sanitarium and Hospital	Loma Linda	Church	124	2		98	2,345	Mixed	3	12	July	(3)	Req	17	$55(a)
California Hospital[1]	Los Angeles	Church	292	2	5	93	9,135	Rotating	10	12	Jan. & July	No	Req	25	$25
Cedars of Lebanon Hospital	Los Angeles	NPAssn	288	22	3	75	7,043	Rotating	9	12	July	No	Req	40	$20
Hollywood Hospital	Los Angeles	Corp	275			100	6,192	Mixed	4	12	July	No	None	41	$25
Los Angeles County Hospital[1]	Los Angeles	County	3,410	100			56,363	Mixed	125	12&24	(1-a)	No	Req	59	No
St. Vincent's Hospital	Los Angeles	Church	250	4	5	91	4,813	Rotating	3	12	July	No	None	34	$40
Santa Fe Coast Lines Hospital	Los Angeles	NPAssn	150			100	2,030	Rotating	5	12	July	(4)	Req	78	$25
White Memorial Hospital[1]	Los Angeles	Church	109		25	75	3,801	Rotating	12	12	July & Sept.	(27)	Req	32	$40(a)
Alameda County Hospitals	Oakland	County	476	100			11,179	Rotating	24	12	July	(5)	None	40	$25
Orange County Hospital	Orange	County	341	98	2		3,067	Rotating	8	12	July	No	Req	70	$15-20
Collis P. and Howard Huntington Memorial Hospital	Pasadena	NPAssn	210	4	14	82	4,231	Rotating	4	12	July	(6)	Req	59	$20
Sacramento County Hospital	Sacramento	County	650	100			8,159	Rotating	10	12	July	No	Req	32	$35
San Bernardino County Charity Hosp.	San Bernardino	County	324	100			3,522	Rotating	8	12	July	(3)	Req	42	$25
San Diego County General Hospital	San Diego	County	663	100			8,588	Rotating	12	12	July	No	Req	42	$15-20
French Hospital	San Francisco	Frat	222			100	3,756	Mixed	6	12	July	No	Req	39	$30(b)
Hospital for Children[2]	San Francisco	NPAssn	239	13	23	64	4,304	Rotating	9	12	July	No	Req	23	No
Letterman General Hospital	San Francisco	Army	600	100			3,812	Rotating	8	12	July	No	Req	74	(d)
Mary's Help Hospital	San Francisco	Church	145	11	23	66	3,799	Rotating	5	12	July	No	Req	43	$25
Mount Zion Hospital[1]	San Francisco	NPAssn	189	18	13	69	3,965	Rotating	6	12	June	No	Req	48	$15
St. Joseph's Hospital[1]	San Francisco	Church	252	3	5	92	4,531	Mixed	5	12	July	No	None	22	$30
St. Luke's Hospital	San Francisco	Church	225	8	9	83	4,864	Rotating	4	12	July	No	Op	25	$15(c)
St. Mary's Hospital	San Francisco	Church	325		11	89	7,650	Rotating	7	12	July	No	Req	22	$25
San Francisco Hospital[1]	San Francisco	CyCo	1,487	100			11,979	Rotating	48	12	July	(7)	Op	53	$70
Southern Pacific General Hospital	San Francisco	NPAssn	400	..	..	..	4,120	Rotating	15	12	July	(8)	Req	39	$30
Stanford University Hospitals[1] (Including Lane Hospital)	San Francisco	NPAssn	324	6	39	55	9,321	Straight	13	12	July	No	Req	53	No
U. S. Marine Hospital	San Francisco	USPHS	493	100			4,274	Rotating	10	12	July	(9)	Op	35	(d)
University of California Hospital[1]	San Francisco	State	293	68		32	6,465	Straight	21	12	June	No	Req	73	No
St. Helena Sanitarium and Hospital[1]	Sanitarium	Church	146	..	..	..	1,941	Mixed	2	12	July	(10)	None	57	$50(a)
Santa Clara County Hospital	San Jose	County	493	98	2		6,292	Rotating	9	12	July	No	Req	39	(e)
St. Francis Hospital	Santa Barbara	Church	100	9	18	73	1,620	Mixed	3	12	July	(11)	Req	45	$20
Santa Barbara Cottage Hospital[1]	Santa Barbara	NPAssn	210	..	..	..	3,250	Rotating	5	12	July	No	Op	54	$20
Santa Barbara General Hospital	Santa Barbara	County	215	93	4	1	2,188	Rotating	5	12	July	(12)	Req	58	$15
COLORADO															
Boulder-Colorado Sanit. and Hosp.[1]	Bouider	Church	107	4	11	85	1,312	Mixed	1	12	July	No	Req	27	$35
Beth-El General Hospital	Colorado Springs	Church	137	8	7	85	2,397	Rotating	3	12	June	(13)	Req	23	No
St. Francis Hospital and Sanitarium	Colorado Springs	Church	130	5	50	45	1,280	Mixed	1	12	July	No	None	35	$25
Colorado General Hospital[1]	Denver	State	178	90	10		3,449	Rotating	12	12	July & Aug.	No	Req	81	$30
Denver General Hospital	Denver	CyCo	589	100			17,838	Rotating	15	18	Jan. & July	No	Req	38	$30
Mercy Hospital	Denver	Church	225	11	38	51	4,800	Rotating	4	12	July	No	None	24	$25
Presbyterian Hospital	Denver	Church	175	2	10	88	4,180	Mixed	4	12	July	No	None	23	$25
St. Anthony's Hospital	Denver	Church	212	9	89	2	2,765	Rotating	4	12	July	No	None	23	$25
St. Joseph's Hospital	Denver	Church	200	44	14	42	4,659	Rotating	4	12	July	No	Req	28	$25
St. Luke's Hospital	Denver	Church	249	..	..	48	6,114	Rotating	6	12	July	No	None	42	$25
St. Mary Hospital	Pueblo	Church	162	34	53	13	3,186	Rotating	2	12	July	No	None	21	(f)
CONNECTICUT															
Bridgeport Hospital	Bridgeport	NPAssn	400	50		50	10,024	Rotating	8	12	July	No	None	50	No
St. Vincent's Hospital	Bridgeport	Church	260	12	41	47	5,707	Rotating	6	12	July	No	Req	17	$20
Danbury Hospital	Danbury	NPAssn	136	18	64	18	2,434	Rotating	2	12	July	No	Req	24	$40
Hartford Hospital	Hartford	NPAssn	780	6	58	36	15,341	Rotating	24	24	June	No	None	52	(g)
Municipal Hospitals	Hartford	City	328	100			5,211	Rotating	10	24	July	No	Req	39	$10
St. Francis Hospital	Hartford	Church	325	33	17	50	9,038	Rotating	9	12	July	No	Req	22	No
Meriden Hospital	Meriden	NPAssn	136	..	..	..	3,620	Rotating	4	12	July	No	Req	33	$15(h)

Numerical and other references will be found on pages 701 and 702.

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Percentage Autopsy	Salary per Month
CONNECTICUT—Continued															
Middlesex Hospital	Middletown	NPAssn	160	12	41	47	3,367	Rotating	3	12	(1-b)	No	None	18	$20(l)
New Britain General Hospital	New Britain	NPAssn	248	2	82	16	4,718	Rotating	5	12	July	No	Op	18	$30
Grace Hospital	New Haven	NPAssn	267	17	39	44	6,424	Rotating	8	24	July	No	Req	23	$10
New Haven Hospital [1]	New Haven	NPAssn	511	37	37	26	8,990	Mix & Str	34	12-20	(1-c)	No	Req	57	No
Lawrence and Memorial Associated Hospitals	New London	NPAssn	234	25	18	57	3,337	Rotating	4	12	July	No	Req	29	$22.50
Norwalk General Hospital	Norwalk	NPAssn	165	15	59	26	3,488	Mixed	2	12	Jan. & July	No	Op	29	$50
William W. Backus Hospital	Norwich	NPAssn	150	5	83	12	2,650	Rotating	2	12	July & Sept.	No	Req	36	$10
Stamford Hospital	Stamford	NPAssn	266	7	74	19	4,596	Rotating	6	12	Jan. & July	No	Req	19	$45
St. Mary's Hospital	Waterbury	Church	264	19	54	27	8,005	Rotating	6	12	July	No	Req	35	$25
Waterbury Hospital	Waterbury	NPAssn	357	16	77	7	5,937	Rotating	7	12	July & Oct.	No	Req	42	$25
DELAWARE															
Delaware Hospital	Wilmington	NPAssn	213	53	10	37	4,249	Rotating	6	12	July	No	Req	25	$25
Homoeopathic Hospital	Wilmington	NPAssn	195	50	10	40	3,986	Rotating	6	12	July	No	Req	20	$25
Wilmington General Hospital	Wilmington	NPAssn	103	55	1	44	2,719	Rotating	4	12	July	No	Req	40	$25(j)
DISTRICT OF COLUMBIA															
Central Disp. and Emergency Hospital	Washington	NPAssn	270	18	14	68	7,928	Mixed	13	12	July	(14)	Req	49	$10
Freedmen's Hospital [1] (col.)	Washington	Fed	376	86		14	5,270	Rotating	24	12	July & Oct.	No	Req	49	$10
Gallinger Municipal Hospital [1]	Washington	City	1,220	100			18,457	Rotating	24	12	July	No	None	34	$15
Garfield Memorial Hospital [1]	Washington	NPAssn	311	1	25	74	5,884	Mixed	10	12	July	No	Req	38	$10(i)
Georgetown University Hospital	Washington	NPAssn	201	6	34	60	5,084	Rotating	7	12	July	(15)	Req	29	$10
George Washington University Hosp. [1]	Washington	NPAssn	113		13	87	2,425	Mixed	4	12	July	No	Req	87	$15
Providence Hospital	Washington	Church	265	5	60	35	5,201	Rotating	8	12	July	No	Req	23	$10
St. Elizabeths Hospital Medical and Surgical Department [1]	Washington	Fed	446	100			1,429	Rotating	8	24	July & Oct.	(16)	Req	66	(d)
Sibley Memorial Hospital	Washington	Church	310	2	60	38	9,037	Rotating	7	12	July	No	Op	21	$20
Walter Reed General Hospital	Washington	Army	1,256	100			7,984	Rotating	6	12	July	...	None	75	(d)
Washington Sanitarium and Hospital, [1] Takoma Park	Washington	Church	182	15	30	55	2,951	Mixed	2	12	July	No	Req	41	$60(a)
FLORIDA															
Brewster Hospital (col.)	Jacksonville	Church	75	6	59	35	911	Mixed	1	12	July	No	Req	17	$25
Duval County Hospital	Jacksonville	County	210	100			3,724	Rotating	8	24	July	No	Req	30	$15-30
St. Luke's Hospital	Jacksonville	NPAssn	175	18	..	..	2,028	Rotating	4	12	July	No	Req	30	$25
St. Vincent's Hospital	Jacksonville	Church	246	11	3	86	3,164	Rotating	3	12	July	No	None	17	$30
James M. Jackson Memorial Hospital	Miami	City	350	55		45	9,829	Rotating	12	12	July	No	Req	18	$25
Tampa Municipal Hospital	Tampa	City	185	46		54	5,074	Rotating	6	12	July & Oct.	No	Req	18	$25
GEORGIA															
Georgia Baptist Hospital	Atlanta	Church	189	11	16	73	6,216	Mixed	7	12	July	(17)	Op	17	$30
Grady Hospital	Atlanta	City	325	100			10,857	Rotating	24	12	July	No	Req	20	$15
Grady Hospital, Emory University Division (Colored Unit)	Atlanta	City	275	100			9,049	Rotating	12	12	July	No	Req	20	$15
Piedmont Hospital	Atlanta	Corp	135			100	2,833	Rotating	4	12	July	No	None	35	$25
University Hospital [1]	Augusta	City	300	52	5	43	7,347	Rotating	10	12	July	No	Req	27	$10(k)
Emory University Hospital	Emory University	NPAssn	180	3	13	84	3,700	Rotating	6	12	July	(17)	None	36	$30
Macon Hospital	Macon	CyCo	202	75		25	4,328	Rotating	5	12	July	No	Req	22	$25(m)
ILLINOIS															
Alexian Bros. Hosp. (male patients only)	Chicago	Church	257	17	29	54	2,768	Rotating	7	12	July	(18)	None	18	$40
American Hospital [1]	Chicago	NPAssn	150	2	7	91	2,018	Rotating	4	12	June	No	Req	36	No
Augustana Hospital	Chicago	Church	350	12	36	52	4,544	Mixed	10	18	Jan. & July	No	Req	26	No
Chicago Memorial Hospital	Chicago	NPAssn	160	34	22	44	2,555	Rotating	4	12	July	No	Req	44	$25
Columbus Hospital	Chicago	Church	174	12	69	19	3,174	Rotating	4	12	July	No	None	89	$25
Edgewater Hospital	Chicago	NPAssn	138	13	7	80	3,329	Rotating	5	12	July	No	None	25	$10
Englewood Hospital	Chicago	NPAssn	126	20	49	31	2,760	Rotating	4	12	Jan. & July	No	Req	32	$30
Evangelical Hospital	Chicago	Church	260	12	10	78	5,905	Mixed	6	12	July	No	None	18	$25
Frances E. Willard Hospital [1]	Chicago	NPAssn	140	1	96	2	3,569	Rotating	6	12	Jan. & July	No	None	25	No
Garfield Park Community Hospital	Chicago	NPAssn	182	10	20	70	3,425	Mixed	6	12	July	No	Req	30	No
Grant Hospital	Chicago	NPAssn	270	17		83	5,486	Rotating	7	12	July	No	Req	22	No
Henrotin Hospital	Chicago	NPAssn	122	10	20	70	2,582	Rotating	3	12	(1-d)	(19)	Req	34	No
Holy Cross Hospital	Chicago	Church	109	10	20	70	3,454	Rotating	4	12	July	No	Op	18	$10
Hospital of St. Anthony de Padua	Chicago	Church	240	4	7	89	4,936	Rotating	6	18	(1-d)	No	None	21	$10(n)
Illinois Central Hospital	Chicago	NPAssn	255	1	35	64	6,390	Rotating	8	12	(1-d)	No	Req	25	No
Illinois Masonic Hospital [1]	Chicago	Frat	159	14		86	2,357	Rotating	5	12	Jan. & July	No	Req	32	No
Jackson Park Hospital	Chicago	NPAssn	216	18	3	79	3,773	Rotating	5	12	Feb. & July	(20)	Req	37	$10
Lake View Hospital	Chicago	Corp.	140	3	14	83	1,867	Rotating	4	12	July	No	Req	59	$25
Lutheran Deaconess Home and Hospital	Chicago	Church	216	4	19	77	4,290	Mixed	5	12	July	No	None	22	$15
Lutheran Memorial Hospital [1]	Chicago	Church	175	10		90	2,355	Mixed	4	12	July	No	None	17	$25
Mercy Hospital	Chicago	Church	360	18	22	60	5,200	Rotating	12	12	July	No	Req	19	No
Michael Reese Hospital [1]	Chicago	NPAssn	636	48	29	23	15,327	Rotat & Str	32	12 & 24	Jan. & July	(21)	Op	51	No
Mother Cabrini Memorial Hospital	Chicago	Church	140	24	65	11	3,510	Rotating	4	12	July	No	None	30	$25
Mount Sinai Hospital [1]	Chicago	NPAssn	204	64	6	30	6,052	Rotating	12	24	June	(22)	Req	44	No
Norwegian-American Hospital	Chicago	NPAssn	180	4	4	92	3,550	Rotating	6	12	Apr. & July	No	Req	33	$20
Passavant Memorial Hospital	Chicago	NPAssn	165	5	1	94	4,198	Mixed	6	12	(1-b)	No	None	60	No
Presbyterian Hospital	Chicago	Church	453	24	47	29	10,921	Mix & Str	27	12-20	(1-e)	No	Op	57	No
Provident Hospital [1] (col.)	Chicago	NPAssn	155	18	6	76	2,480	Rotating	6	12	July & Oct.	No	Req	39	No
Ravenswood Hospital	Chicago	NPAssn	198	5	15	80	5,440	Rotating	6	12	July	No	Op	22	No
Research and Educational Hospital [1]	Chicago	State	382	100			5,791	Rotating	12	18	July	No	Req	86	No
Roseland Community Hospital	Chicago	Corp	133	13	14	73	3,177	Rotating	4	12	July	No	Req	28	$15
St. Anne's Hospital	Chicago	Church	290	12	49	39	6,168	Rotating	7	12	July	No	None	31	No
St. Bernard's Hospital	Chicago	Church	230	18	18	64	5,564	Rotating	6	12	July	No	None	22	No
St. Elizabeth Hospital	Chicago	Church	223	7	23	70	5,334	Rotating	7	12	July	No	Req	22	No
St. Joseph Hospital	Chicago	Church	250	7	28	65	3,472	Rotating	7	12	Apr. & July	No	Req	33	No
St. Luke's Hospital	Chicago	NPAssn	659	4	20	76	9,706	Rotating	24	12	(1-d)	No	Req	40	No
St. Mary of Nazareth Hospital	Chicago	Church	200	18	4	78	4,733	Rotating	6	12	July	No	None	22	No
Swedish Covenant Hospital	Chicago	Church	217	1	10	89	3,930	Rotating	6	12	Apr. & July	No	Req	17	$15
U. S. Marine Hospital	Chicago	USPHS	293	100			2,832	Rotating	6	12	July	(23)	Req	35	(d)
University Hospital	Chicago	Corp	125	7	7	86	1,421	Rotating	3	12	July	No	Req	33	$15
University of Chicago Clinics [1]	Chicago	NPAssn	293	26	69	5	7,338	Straight	32	12	Jan. & July	(24)	Req	72	No
Washington Boulevard Hospital	Chicago	NPAssn	110	3	4	93	1,785	Mixed	6	18	(1-d)	No	Req	17	No
Wesley Memorial Hospital [1]	Chicago	Church	268	34	16	50	3,170	Rotating	8	12	Jan. & July	No	None	68	No
Women and Children's Hospital [2]	Chicago	NPAssn	125	28	8	64	1,809	Rotating	6	12	Jan. & July	No	Req	57	No
Woodlawn Hospital	Chicago	NPAssn	172	1	64	35	2,609	Mixed	3	12	July	No	None	31	$25
St. Mary's Hospital	East St. Louis	Church	296	2	51	47	3,786	Rotating	5	12	July	No	None	16	$25
Evanston Hospital	Evanston	NPAssn	270	15	38	47	6,573	Rotating	12	16	(1-e)	No	Req	66	No
St. Francis Hospital	Evanston	Church	370	6	57	37	5,280	Mixed	8	12	July	No	None	35	$25
Little Company of Mary Hospital	Evergreen Park	Church	182	8	23	69	3,406	Rotating	3	12	July	No	None	23	$25
St. Joseph Hospital	Joliet	Church	225	20	30	50	4,282	Rotating	3	12	July	No	None	21	$10
Oak Park Hospital	Oak Park	Church	165	7	12	81	3,613	Rotating	6	12	July & Sept.	No	Req	19	No

Numerical and other references will be found on pages 701 and 702.

V 10
1936

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
ILLINOIS—Continued															
West Suburban Hospital	Oak Park	NPAssn	427	..	..	..	6,608	Rotating	10	12	July & Oct.	No	Req	26	No
St. Francis Hospital	Peoria	Church	330	9	24	67	7,122	Mixed	6	12	July	(25)	None	26	$20
St. Mary Hospital	Quincy	Church	215	43	42	15	3,609	Rotating	8	12	July	No	None	19	$25
St. Anthony's Hospital	Rock Island	Church	168	25	40	35	1,706	Mixed	1	12	July	No	Op	25	$25
INDIANA															
St. Catherine's Hospital	East Chicago	Church	250	2	19	79	3,768	Rotating	6	12	June & July	No	None	19	$25
Lutheran Hospital	Fort Wayne	Church	159	10	10	80	3,350	Mixed	3	12	July	No	None	26	$25
St. Joseph Hospital	Fort Wayne	Church	300	9	31	60	4,870	Rotating	5	12	July	No	None	20	$25
St. Mary's Mercy Hospital	Gary	Church	270	2	41	57	5,425	Rotating	5	12	June & July	No	None	18	$25
St. Margaret's Hospital	Hammond	Church	250	3	75	22	5,464	Rotating	8	12	(1-g)	No	Req	15	$30
Indianapolis City Hospital	Indianapolis	City	577	92	4	4	11,813	Mixed	32	12	July	No	Req	41	$10
Indiana University Hospitals [1]	Indianapolis	State	504	90	3	7	9,200	Rotating	22	12	July	(26)	Req	45	$12.50
Methodist Episcopal Hospital	Indianapolis	Church	526	..	..	75	17,311	Rotating	18	12	July	No	Op	33	$10
St. Vincent's Hospital	Indianapolis	Church	295	17	18	65	5,865	Rotating	9	12	July	No	None	23	$15
St. Elizabeth Hospital	La Fayette	Church	245	18	66	16	5,202	Rotating	4	12	July	No	None	25	$30
Ball Memorial Hospital [1]	Muncie	NPAssn	162			100	3,104	Mixed	6	12	July	No	None	36	$15
Epworth Hospital	South Bend	NPAssn	192	15		85	3,630	Mixed	3	12	July	No	Req	21	$35
St. Joseph Hospital	South Bend	Church	147	38	31	31	2,543	Rotating	2	12	July	No	Req	31	$25(o)
IOWA															
Mercy Hospital	Cedar Rapids	Church	173	5	7	88	2,310	Mixed	2	12	July	No	Req	24	$25
St. Luke's Methodist Hospital	Cedar Rapids	Church	150	5	61	34	2,702	Mixed	2	12	July	No	Op	16	$25
Jennie Edmundson Memorial Hospital	Council Bluffs	NPAssn	130	..	..	..	1,819	Mixed	3	12	July	No	Req	27	$30
Mercy Hospital	Council Bluffs	Church	165	5	79	22	2,481	Rotating	3	12	June	No	None	20	$25(l)
Mercy Hospital	Davenport	Church	145	16	30	54	3,059	Mixed	2	12	July	No	None	15	$25
Iowa Lutheran Hospital [1]	Des Moines	Church	135	4	16	80	2,592	Rotating	3	12	July	No	None	23	$25(p)
Iowa Methodist Hospital	Des Moines	Church	270	9	25	66	6,900	Rotating	6	12	July	No	Req	23	$20
Mercy Hospital	Des Moines	Church	176	6	4	90	3,674	Rotating	5	12	July	No	None	26	$25
University Hospitals [1]	Iowa City	State	954	87	8	5	18,232	Rotating	19	12	July	No	Req	57	(l)
St. Joseph Mercy Hospital	Sioux City	Church	220		8	92	4,215	Rotating	4	12	July	No	None	34	$25
KANSAS															
Bethany Methodist Hospital [1]	Kansas City	Church	145	5	15	80	2,863	Rotating	3	12	July	No	None	51	$25
St. Margaret Hospital	Kansas City	Church	275	38	53	9	3,894	Rotating	6	12	July	No	Req	69	$25
University of Kansas Hospitals [1]	Kansas City	State	250	15	37	48	5,755	Rotating	8	12	July	(28)	Req	84	$15
St. Francis Hospital	Wichita	Church	300	20	30	50	4,558	Rotating	6	12	July	(29)	Req	38	$40
Wesley Hospital	Wichita	Church	230	10	30	60	4,496	Rotating	6	12	July	(30)	None	27	$25
Wichita Hospital	Wichita	Church	115	24	22	54	2,265	Mixed	2	12	July	(29)	Req	31	$50
KENTUCKY															
St. Elizabeth Hospital	Covington	Church	309	39	44	17	5,335	Mixed	6	12	July	No	Req	18	$25
Good Samaritan Hospital [1]	Lexington	Church	198	25	3	72	5,133	Rotating	4	12	July	No	Req	21	$25
St. Joseph's Hospital	Lexington	Church	205	7	35	58	4,206	Mixed	6	12&24	July	(31)	None	33	$25
Kentucky Baptist Hospital	Louisville	Church	150	13	38	49	3,513	Mixed	4	12	July	No	None	15	$25
Louisville City Hospital [1]	Louisville	City	423	90	10		11,269	Rotating	18	12	July	(32)	Req	29	$9.25
Norton Memorial Infirmary	Louisville	NPAssn	145	9	59	32	2,889	Mixed	8	12	July	(33)	Req	23	$30
St. Anthony's Hospital	Louisville	Church	157	13	56	31	2,481	Mixed	3	12	July	No	Op	16	$25
St. Joseph Infirmary	Louisville	Church	350	23	22	55	5,734	Mixed	4	12	July	No	None	22	$25
SS. Mary and Elizabeth Hospital	Louisville	Church	175	..	..	..	3,127	Mixed	2	12	July	No	None	15	$40
LOUISIANA															
Charity Hospital [1]	New Orleans	State	1,913	100			69,202	Rotat&Str	55	12	July	No	Req	40	No
Flint Goodridge Hospital of Dillard University [1] (col.)	New Orleans	NPAssn	100	44	16	40	1,313	Rotating	4	12	July	No	Req	16	$10
Hotel Dieu Hospital	New Orleans	Church	243	6	18	76	6,632	Mixed	6	12	July	No	None	28	$25
Mercy Hospital-Scottish Memorial	New Orleans	Church	130	9	8	83	2,558	Mixed	4	12	July	No	Req	23	$25
Southern Baptist Hospital	New Orleans	Church	220	14	28	58	7,265	Mixed	8	12	July	No	None	23	$15(k)
Touro Infirmary [1]	New Orleans	NPAssn	366	31	38	31	8,893	Rotating	16	12	July	No	Req	46	$10
U. S. Marine Hospital	New Orleans	USPHS	572	100			3,545	Rotating	13	12	July	(34)	Op	63	(d)
T. E. Schumpert Memorial Sanitarium	Shreveport	Church	162	25	50	25	3,632	Mixed	1	12	July	No	None	32	$30
Shreveport Charity Hospital	Shreveport	State	800	100			18,291	Rotating	20	12	July	No	None	44	$10
MAINE															
Eastern Maine General Hospital	Bangor	NPAssn	173	25	16	59	3,742	Mixed	3	12	Sept.	No	Req	21	$25
Central Maine General Hospital [1]	Lewiston	NPAssn	302	29	30	41	3,454	Mixed	4	12	July	No	Op	38	No
St. Mary's General Hospital	Lewiston	Church	150	31	21	48	2,522	Mixed	4	12	July	No	Req	26	$30
Maine General Hospital	Portland	NPAssn	275	32	46	22	5,575	Mixed	6	12	Apr. & July	No	Req	35	No
MARYLAND															
Baltimore City Hospitals [1] (General)	Baltimore	City	963	100			8,146	Rotat&Str	35	12	July	No	Req	41	No
Bon Secours Hospital	Baltimore	Church	143	33	23	44	2,389	Rotating	3	12	July	(35)	Req	73	$25
Church Home and Infirmary [1]	Baltimore	Church	184	21	53	26	2,894	Rotating	7	12	July	No	Req	46	$15
Franklin Square Hospital	Baltimore	NPAssn	129	73		27	1,656	Mixed	5	12	July	No	None	17	$12.50(p)
Hospital for Women [1]	Baltimore	NPAssn	134	30	47	33	2,150	Mixed	5	12	July	(36)	Req	31	No
Johns Hopkins Hospital [1]	Baltimore	NPAssn	902	53	21	26	14,391	Straight	59	12	July & Sept.	No	Req	80	No
Maryland General Hospital	Baltimore	Church	238	42	9	49	4,613	Rotating	9	12	July	No	Req	18	$10
Mercy Hospital	Baltimore	Church	500	53	11	36	6,058	Rotating	19	12	July	No	Req	38	No
Provident Hosp. and Free Disp. (col.)	Baltimore	NPAssn	132	83	4	13	2,069	Rotating	8	12	June & Oct.	No	Req	17	No
St. Agnes Hospital	Baltimore	Church	205	38	34	28	3,800	Rotating	9	12	July	(35)	Req	26	No
St. Joseph's Hospital	Baltimore	Church	285	41	12	47	5,380	Rotating	6	12	July	No	Req	30	$15
Sinai Hospital [1]	Baltimore	NPAssn	204	4	8	88	3,111	Str&Mix	19	12	July	No	Req	27	No
South Baltimore General Hospital	Baltimore	NPAssn	125	31	42	27	2,909	Rotating	8	12	July	No	Req	34	$20
Union Memorial Hospital	Baltimore	NPAssn	275	22	48	30	5,348	Mixed	15	12	July	No	Req	37	No
U. S. Marine Hospital	Baltimore	USPHS	313	100			2,497	Rotating	8	12	July	(37)	Req	58	(d)
University Hospital [1]	Baltimore	State	450	50	6	44	7,074	Rotating	24	24	July	No	Req	44	No
West Baltimore General Hospital	Baltimore	Corp	200	35		65	2,447	Rotating	5	12	July	(38)	Req	21	$15
MASSACHUSETTS															
Beverly Hospital	Beverly	NPAssn	141		50	50	3,267	Mixed	3	12	(1-l)	No	Req	49	No
Beth Israel Hospital	Boston	NPAssn	215	18	32	50	5,292	Straight	11	13½ & 24½	(1-l)	No	Req	51	No
Boston City Hospital [1]	Boston	City	1,732	90	9	1	42,860	Straight	93	12-24	Varies	(39)	Req	29	No
Carney Hospital	Boston	Church	171	4	88	8	3,387	Straight	12	12-20	(1-m)	No	Req	21	No
Faulkner Hospital	Boston	NPAssn	165	1	70	29	3,480	Mixed	2	12	June	No	Req	55	No
Long Island Hospital	Boston	City	566	100			2,553	Rotating	6	12	July	No	Req	52	$30
Massachusetts General Hospital	Boston	NPAssn	424	47	34	19	8,525	Straight	32	19 & 25	(1-d)	No	Req	57	No
Massachusetts Memorial Hospitals [1]	Boston	NPAssn	346	23	45	32	6,121	Rotating	12	12	Aug.	No	Req	39	No
New England Hospital for Women and Children, [2] Roxbury	Boston	NPAssn	200	7	1	92	4,485	Rotating	8	12	July & Oct.	No	Req	38	No

Numerical and other references will be found on pages 701 and 702.

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
MASSACHUSETTS—Continued															
Peter Bent Brigham Hospital	Boston	NPAssn	247	44	29	27	4,422	Straight	24	16½	(1-k)	(40)	Req	61	No
St. Elizabeth's Hospital, Brighton	Boston	Church	300	20	30	50	4,083	Mixed	7	21	(1-d)	No	Req	16	No
Brockton Hospital	Brockton	NPAssn	154	13	66	21	2,582	Rotating	3	12	June & Aug.	No	Op	23	$10(l)
Cambridge City Hospital	Cambridge	City	206	65	5	30	5,205	Rotating	14	22-24	(1-e)	No	Req	15	No
Cambridge Hospital	Cambridge	NPAssn	300	22	60	18	5,380	Rotating	5	18	(1-d)	(41)	Req	17	No
Union Hospital	Fall River	NPAssn	186	11	32	57	3,001	Mixed	2	12	July	No	Req	24	$30-50
Burbank Hospital	Fitchburg	Corp	215	53	14	33	4,220	Mixed	4	12	(1-d)	No	Req	21	$25
Providence Hospital	Holyoke	Church	175	10		90	4,593	Mixed	2	12	June	No	None	18	$25
Lawrence General Hospital	Lawrence	NPAssn	151	24	2	74	3,006	Mixed	2	12	June	No	Req	31	$10
Lowell General Hospital	Lowell	NPAssn	180	7	65	28	3,826	Mixed	2	12	July	No	Req	32	$25
St. John's Hospital	Lowell	Church	167	7	59	34	3,281	Mixed	4	12	June	No	Req	21	(m)
St. Joseph's Hospital	Lowell	Church	122	3	57	40	2,774	Mixed	2	12	July	No	Req	27	$10
Lynn Hospital	Lynn	NPAssn	205	15	25	60	4,535	Mixed	4	12	June	No	Req	24	$10(q)
St. Luke's Hospital	New Bedford	NPAssn	329	10	47	43	6,433	Rotating	6	12	July	No	Req	19	No
Newton Hospital	Newton	NPAssn	240	28	45	27	5,392	Rotating	6	12	June	No	Req	41	No
House of Mercy Hospital	Pittsfield	NPAssn	227	3	89	8	2,970	Mixed	3	12	July	No	Req	15	$40
St. Luke's Hospital	Pittsfield	Church	189	7	35	58	2,326	Mixed	2	12	June	No	Req	16	$25
Quincy City Hospital	Quincy	City	249	14	6	80	5,841	Rotating	6	12	Jan. & July	No	Req	34	No
Salem Hospital	Salem	NPAssn	366	28	42	30	5,857	Rotating	3	12	July & Aug.	No	Req	25	$25
Mercy Hospital	Springfield	Church	380	5	15	80	6,864	Rotating	6	12	July	(42)	Req	29	$25
Springfield Hospital	Springfield	NPAssn	265	7	78	15	5,462	Rotating	9	18	Jan. & July	(43)	Req	20	No
Wesson Memorial Hospital	Springfield	NPAssn	120	3	40	57	2,748	Mixed	3	18	Jan. & July	(43)	Req	17	$25
State Infirmary [1]	Tewksbury	State	1,756	100			1,834	Mixed	4	16	(1-d)	No	None	15	No
Waltham Hospital	Waltham	NPAssn	216	7	82	11	3,144	Rotating	3	12	June-Aug.	No	Req	48	$15(j)
Memorial Hospital	Worcester	NPAssn	215	17	7	76	5,226	Mixed	9	18	(1-e)	No	Req	48	No
St. Vincent Hospital	Worcester	Church	230	9	12	79	5,370	Rotating	4	12	(1-d)	No	Req	26	No
Worcester City Hospital	Worcester	City	400	86		14	9,969	Rotating	18	24	(1-n)	No	Req	36	No
Worcester Hahnemann Hospital	Worcester	NPAssn	140	5	72	23	1,972	Rotating	3	12	July	No	None	42	$35
MICHIGAN															
St. Joseph's Mercy Hospital	Ann Arbor	Church	140	12	24	64	2,267	Mixed	2	12	July	No	Op	36	$25
University Hospital [1]	Ann Arbor	State	1,285	79		21	24,235	Rotat&Mix	33	12	July	No	Req	57	No
Mercy Hospital	Bay City	Church	140	5	23	72	4,019	Mixed	3	12	July & Sept.	No	None	18	No
City of Detroit Receiving Hospital	Detroit	City	650	100			22,007	Rotating	26	12	July	(44)	Req	28	$25
Evangelical Deaconess Hospital	Detroit	Church	135	1	31	68	5,527	Rotating	2	12	July	No	Req	18	$25
Grace Hospital [1]	Detroit	NPAssn	538	31	42	27	11,249	Rotating	24	12	July & Sept.	(44)	Req	18	$25
Harper Hospital	Detroit	NPAssn	725	10		90	15,416	Rotating	35	12	July	(45)	Req	22	No
Henry Ford Hospital	Detroit	NPAssn	606	34		66	11,483	Rotating	24	12	Sept.	No	None	41	$100(a)
Providence Hospital	Detroit	Church	450	21	67	12	10,702	Rotating	16	12	July	(46)	None	32	$20
St. Joseph's Mercy Hospital	Detroit	Church	235	2	24	74	5,254	Rotating	7	12	July	No	Req	27	$25
St. Mary's Hospital	Detroit	Church	331	4	29	67	6,411	Rotating	10	12	July	No	Req	33	$20
Eloise Hospital [1] (Dr. William J. Seymour Hospital)	Eloise	County	1,368	100			5,091	Rotating	13	12	July	(44)	Req	44	$25
Hurley Hospital [1]	Flint	City	487	..	..	..	9,165	Rotating	14	12	July	No	None	45	$20(k)
Blodgett Memorial Hospital	Grand Rapids	NPAssn	150	20	55	25	2,930	Mixed	4	12	July	No	Req	36	No
Butterworth Hospital	Grand Rapids	NPAssn	272	8		92	4,165	Mixed	6	12	July	No	Req	48	$7.50
St. Mary's Hospital	Grand Rapids	Church	253	1	33	66	4,157	Rotating	6	12	July	No	Req	20	(i)
Highland Park General Hospital	Highland Park	City	150	20		80	3,555	Rotating	6	12	July & Sept.	No	Req	15	$15
W. A. Foote Memorial Hospital	Jackson	City	150	5		95	4,599	Mixed	3	12	July	No	Req	18	$25
Edward W. Sparrow Hospital [1]	Lansing	NPAssn	145	2	72	26	3,824	Mixed	2	12	July	No	Req	15	$25
St. Lawrence Hospital	Lansing	Church	125	..	..	..	3,477	Mixed	3	12	July	(47)	None	32	$40
Hackley Hospital	Muskegon	NPAssn	125	20	60	20	3,336	Mixed	2	12	July	No	None	19	$25
Mercy Hospital	Muskegon	Church	125	20	44	36	3,455	Mixed	2	12	July	No	None	30	$50
St. Joseph Mercy Hospital [1]	Pontiac	Church	175	5	31	64	2,908	Rotating	3	12	July	No	Req	41	$15-25
Saginaw General Hospital	Saginaw	NPAssn	156	8	8	84	2,753	Rotating	3	12	July	No	Req	34	$25
St. Mary's Hospital [1]	Saginaw	Church	176	14	10	76	3,133	Mixed	3	12	July	No	Req	23	$40
MINNESOTA															
St. Luke's Hospital	Duluth	NPAssn	270	20		70	5,374	Rotating	7	12	July	(48)	Req	60	$12.50
St. Mary's Hospital	Duluth	Church	290	22	49	29	5,216	Rotating	7	12	(1-f)	(48)	Req	73	$12.50
Asbury Hospital [1]	Minneapolis	Church	140	10		90	3,165	Rotating	4	12	Jan. & July	No	Op	35	$25
Fairview Hospital	Minneapolis	Church	225	15	50	35	3,973	Mixed	4	12	Jan. & July	(49)	Req	19	$25
Lutheran Deaconess Home and Hosp.	Minneapolis	Church	150	3	8	89	3,018	Rotating	4	12	Jan. & July	No	Op	21	$25
Minneapolis General Hospital [1]	Minneapolis	City	1,867	55	5	40	8,734	Rotating	27	12	Apr. & Oct.	No	Req	30	No
Northwestern Hospital [1]	Minneapolis	NPAssn	185	10	15	75	5,791	Rotating	3	12	July	No	Op	29	$25
St. Barnabas Hospital	Minneapolis	NPAssn	150	3		97	3,281	Mixed	3	12	July	No	None	24	$25
St. Mary's Hospital [1]	Minneapolis	Church	200	6	39	55	4,038	Rotating	5	12	July	No	Op	32	$15(j)
Swedish Hospital	Minneapolis	NPAssn	225	6	10	84	5,499	Mixed	4	12	July	No	Req	32	$25
University Hospitals [1]	Minneapolis	State	450	10	53	37	8,861	Rotat&Str	22	12&24	July	(50)	Req	71	No
Ancker Hospital	St. Paul	CyCo	900	100			12,847	Rotating	32	12	July	No	Req	65	No
Bethesda Hospital	St. Paul	Church	137	1	3	96	3,927	Rotating	3	12	July	(51)	None	25	$25
Charles T. Miller Hospital	St. Paul	NPAssn	220	33	34	33	5,632	Rotating	7	12	July	(51)	Req	56	No
Northern Pacific Beneficial Association Hospital	St. Paul	NPAssn	150			100	2,475	Mixed	2	12	July	No	Req	29	$25
St. Joseph's Hospital	St. Paul	Church	270	7	7	86	6,288	Rotating	6	12	July	(52)	None	33	$25
MISSOURI															
Kansas City General Hospital	Kansas City	City	450	100			9,314	Rotating	24	12	July	No	Req	98	$90
Kansas City General Hospital No. 2 (col.)	Kansas City	City	274	100			3,765	Rotating	12	12	July	No	Req	80	$17.50
Menorah Hospital	Kansas City	NPAssn	143	10	20	70	2,939	Rotating	5	12	July	(53)	Req	46	$25
Research Hospital	Kansas City	NPAssn	225	4		96	4,541	Rotating	5	12	July	No	None	73	$25
St. Joseph's Hospital	Kansas City	Church	235	20	50	30	4,142	Mixed	6	12	July	No	None	84	$25
St. Luke's Hospital	Kansas City	Church	225	3	54	53	4,230	Mixed	5	12	July	No	None	85	$25
St. Mary's Hospital	Kansas City	Church	175	21	18	61	3,820	Rotating	5	12	July	No	None	67	$25
Trinity Lutheran Hospital	Kansas City	Church	149	1	10	89	2,202	Rotating	4	12	July	No	None	49	$25(p)
Missouri Methodist Hospital	St. Joseph	Church	220	2	36	62	4,143	Rotating	4	12	July	No	Op	40	$35
St. Joseph's Hospital	St. Joseph	Church	211	5	46	49	3,132	Rotating	4	12	July	No	None	52	$30
Alexian Bros. Hosp. (male patients only)	St. Louis	Church	250	18	25	57	1,316	Mixed	4	12	July	(54)	Req	18	$15(j)
Barnes Hospital	St. Louis	Church	300	16	4	80	8,134	Straight	32	12&18	Jan. & July	(55)	Op	57	No
Christian Hospital [1]	St. Louis	NPAssn	118	3	3	94	1,573	Rotating	4	12	July	No	None	17	$12.50
De Paul Hospital	St. Louis	Church	285	11	45	44	5,725	Rotating	6	12	July	No	Req	32	$25
Evangelical Deaconess Home and Hosp.	St. Louis	Church	180	6	10	84	4,064	Rotating	6	12	July	No	None	33	$25(l)
Jewish Hospital	St. Louis	NPAssn	280	29	52	19	4,688	Rotating	11	12	July	(56)	Req	31	$15
Lutheran Hospital	St. Louis	Church	180	4	38	58	2,724	Mixed	3	12	July	No	None	33	$25
Missouri Baptist Hospital	St. Louis	Church	500	11	10	79	4,563	Mixed	8	12	July	No	None	26	$25
St. Anthony's Hospital	St. Louis	Church	250	11	8	81	5,501	Rotating	5	12	July	(57)	None	18	$10
St. John's Hospital	St. Louis	Church	318	20	3	77	5,332	Rotating	12	12	July	No	Req	26	$20
St. Louis City Hospital	St. Louis	City	806	100			21,422	Rotating	60	12	July	(58)	Req	43	$10(h)
St. Louis City Hospital No. 2 (col.)	St. Louis	City	325	100			18,182	Rotating	22	12	July	No	Req	16	$10(h)
St. Luke's Hospital	St. Louis	Church	210	14	31	55	4,610	Rotating	8	13	July	No	Req	25	$20
St. Mary's Group of Hospitals	St. Louis	Church	661	36	31	33	9,773	Rotating	26	12	July	(59)	Req	44	No
St. Mary's Infirmary (col.)	St. Louis	Church	160	3	88	9	2,967	Rotating	4	12	July	No	Req	44	No

Numerical and other references will be found on pages 701 and 702.

V 107
1936

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
MONTANA															
Murray Hospital	Butte	Corp	132			100	1,715	Mixed	2	12	Jan. & July	No	Req	32	$40
St. James Hospital	Butte	Church	157	6	19	75	2,093	Rotating	2	12	July	No	Req	40	$50
NEBRASKA															
St. Francis Hospital	Grand Island	Church	145	2	68	30	1,986	Mixed	2	12	July	No	None	33	$25
Bryan Memorial Hospital	Lincoln	Church	114	1	5	94	1,993	Mixed	2	12	July	No	None	33	$25
Lincoln General Hospital	Lincoln	City	190	10	50	40	2,634	Mixed	2	12	July	No	Op	37	$25
St. Elizabeth's Hospital	Lincoln	Church	200	16	58	26	4,054	Mixed	2	12	July	No	None	16	$35
Bishop Clarkson Memorial Hospital	Omaha	Church	108	3	68	29	2,059	Rotating	3	12	July	No	None	54	$25
Creighton Memorial St. Joseph's Hosp.	Omaha	Church	453	21	61	18	6,947	Rotating	10	12	July	No	Req	45	$20(k)
Immanuel Deaconess Institute	Omaha	Church	146	2	13	85	3,867	Rotating	4	12	June	No	None	31	$30(j)
Nebraska Methodist Episcopal Hospital	Omaha	Church	200	10	10	80	3,883	Rotating	4	12	July	No	None	21	$25
St. Catherine's Hospital	Omaha	Church	175	15	5	80	3,852	Rotaitng	4	12	July	No	None	24	$25
University of Nebraska Hospital	Omaha	State	240	100			5,527	Rotating	12	12	July	No	Req	78	$25
NEW HAMPSHIRE															
Mary Hitchcock Memorial Hospital	Hanover	NPAssn	142	40	36	24	3,304	Rotating	4	12	Jan. & July	No	Req	87	$100 yr.
NEW JERSEY															
Atlantic City Hospital	Atlantic City	NPAssn	276	43	28	29	6,246	Rotating	8	12	July	(60)	Req	26	$25
Bayonne Hospital and Dispensary	Bayonne	NPAssn	225	80	2	18	4,032	Rotating	5	15	(1-d)	No	Req	51	$25
Cooper Hospital	Camden	NPAssn	360	45	21	34	8,099	Rotating	10	12	July	No	Req	42	$10
West Jersey Homeopathic Hospital	Camden	NPAssn	237	33	31	36	5,010	Rotating	7	12	June	No	Req	20	$10
Homeopathic Hospital of Essex County	East Orange	NPAssn	120	13	53	34	2,758	Rotating	3	12	July	No	Req	34	$25
Alexian Bros. Hosp. (male patients only)	Elizabeth	Church	162	46	5	49	1,971	Rotating	3	12	July	(61)	Req	24	$50
Elizabeth General Hosp. and Disp.	Elizabeth	NPAssn	226	30		70	5,379	Rotating	9	12	July	No	Req	42	$15
St. Elizabeth Hospital [1]	Elizabeth	Church	250	41	8	51	4,553	Rotating	5	12	July	No	Req	24	$15
Englewood Hospital [1]	Englewood	NPAssn	238	43	41	16	5,273	Rotating	9	12&18	Jan. & July	No	Req	24	$20
Hackensack Hospital	Hackensack	NPAssn	255	65	21	14	6,277	Rotating	8	18	Jan. & July	(62)	Req	27	$25
St. Mary Hospital	Hoboken	Church	460	64	26	10	5,003	Rotating	9	12	July	No	Req	23	$25
Christ Hospital	Jersey City	Church	306	18	2	80	5,978	Rotating	7	12	July & Oct.	No	Req	21	$25
Medical Center of Jersey City [1]	Jersey City	City	1,200	94		6	19,449	Rotating	69	12-24	(1-o)	(63)	Req	16	No
St. Francis Hospital	Jersey City	Church	240	32	23	45	3,432	Rotating	8	24	July	(64)	Req	22	No
Monmouth Memorial Hospital	Long Branch	NPAssn	207	60	15	25	4,473	Rotating	9	18	Jan. & July	(65)	Req	25	$15
Mountainside Hospital	Montclair	NPAssn	330	47	28	25	5,152	Rotating	9	18	Jan. & July	No	Req	28	$25
All Souls Hospital	Morristown	Church	134	84		66	2,253	Rotating	3	12	July	No	Req	32	$35
Morristown Memorial Hospital [1]	Morristown	NPAssn	160	40	20	40	2,504	Rotating	4	12	July	No	Req	46	$40
Burlington County Hospital	Mount Holly	NPAssn	141	39	27	34	2,666	Rotating	4	12	July	(66)	Req	33	$25
Fitkin Memorial Hospital	Neptune	NPAssn	173	75	5	20	4,103	Rotating	7	12	Jan. & July	No	Req	15	$25
Hospital of St. Barnabas and for Women and Children [1]	Newark	Church	140	27	9	64	2,997	Rotating	3	12	July	No	Req	52	$45
Newark Beth Israel Hospital	Newark	NPAssn	414	18	24	58	10,368	Rotating	12	16	Jan. & July	No	Op	33	$100 yr.
Newark City Hospital [1]	Newark	City	700	100			15,922	Rotating	24	24	(1-d)	No	Req	29	No
Newark Memorial Hospital	Newark	NPAssn	161	28	44	28	2,484	Rotating	4	12	July	No	Req	23	$25
St. James Hospital [1]	Newark	Church	125	3	8	89	2,259	Mixed	2	12	July	No	Req	39	$30
St. Michael's Hospital	Newark	Church	317	39	21	40	5,071	Rotating	7	12	July & Aug.	(64)	Req	47	$30
St. Peter's General Hospital	New Brunswick	Church	212	29	38	33	3,862	Rotating	4	12	July & Sept.	No	Req	28	(j)
Orange Memorial Hospital	Orange	NPAssn	400	30	18	52	6,963	Rotating	8	12	July	No	Req	35	$25
St. Mary's Hospital	Orange	Church	150	31	51	18	2,803	Rotating	4	12	July	No	Req	26	$25
Passaic General Hospital [1]	Passaic	NPAssn	225	60	10	30	3,888	Rotating	4	12	June	No	Req	22	$25
St. Mary's Hospital [1]	Passaic	Church	200	43	19	38	5,184	Rotating	4	12	July	No	Req	15	$25
Nathan and Miriam Barnert Memorial Hospital [1]	Paterson	NPAssn	118	42	20	38	2,868	Rotating	4	12	July & Oct.	No	Req	33	$15-20
Paterson General Hospital	Paterson	NPAssn	326	40	3	57	5,798	Rotating	7	18	Jan. & July	No	Op	25	$25
St. Joseph Hospital	Paterson	Church	458	25	19	56	6,567	Rotating	8	24	July	No	Req	23	$12.50-25
Muhlenberg Hospital	Plainfield	NPAssn	274	54	15	31	5,631	Rotating	5	12	July	No	Req	29	$25
Holy Name Hospital	Teaneck	Church	220	70	15	15	3,856	Rotating	6	12	July	(62)	Req	24	$40
Mercer Hospital	Trenton	NPAssn	250	44	3	53	4,494	Rotating	6	12	July	No	Req	25	$25
St. Francis Hospital	Trenton	Church	317	43	19	38	5,205	Rotating	8	12	July	No	Req	20	$25
William McKinley Memorial Hospital	Trenton	NPAssn	146	45	3	52	2,841	Rotating	4	12	July	No	Req	17	$25
North Hudson Hospital [1]	Weehawken	NPAssn	191	64	14	22	3,127	Rotating	7	12	July & Sept.	No	Req	26	$25
NEW YORK															
Albany Hospital [1]	Albany	NPAssn	610	8	75	17	10,885	Rotating	21	12	July	No	Req	72	No
Memorial Hospital [1]	Albany	NPAssn	140	1	32	67	2,857	Mixed	5	12	July & Sept.	No	Req	43	$25
St. Peter's Hospital	Albany	Church	155	6	37	57	2,902	Mixed	5	12	July	(68)	Req	32	$40
Beth-El Hospital	Brooklyn	NPAssn	238	27	63	10	6,375	Rotating	18	18-24	Jan. & July	No	Op	22	No
Beth Moses Hospital	Brooklyn	NPAssn	224	38	4	58	4,704	Rotating	16	24	Jan. & July	No	Req	30	No
Brooklyn Hospital	Brooklyn	NPAssn	420	8	20	72	6,613	Rotating	16	24	July	No	Op	38	No
Bushwick Hospital	Brooklyn	NPAssn	127	19	20	61	3,112	Rotating	6	24	July	No	Req	18	No
Caledonian Hospital	Brooklyn	NPAssn	130	2	59	39	1,542	Rotating	2	12	July	No	Req	36	$25
Coney Island Hospital [1]	Brooklyn	City	300	100			9,516	Rotating	20	24	July	No	Req	35	$15
Cumberland Hospital	Brooklyn	City	318	100			8,195	Rotat&Str	25	12&24	July	No	Op	40	$15
Greenpoint Hospital	Brooklyn	City	320	100			7,205	Rotating	16	24	July	No	Req	36	$15
Israel-Zion Hospital	Brooklyn	NPAssn	450	28	4	68	11,202	Rotating	24	24	July	(69)	Req	23	No
Jewish Hospital [1]	Brooklyn	NPAssn	664	30	40	30	15,012	Rotating	58	18	Jan. & July	(69)	Req	40	No
Kings County Hospital	Brooklyn	City	3,160	100			59,339	Rotating	54	18	(1-c)	No	Req	19	$15
Long Island College Hospital [1]	Brooklyn	NPAssn	473	18	34	48	9,057	Straight	19	12	July	No	Req	34	No
Methodist Episcopal Hospital	Brooklyn	Church	412	16	24	60	9,740	Rotating	12	24	July	No	Req	28	No
Norwegian Lutheran Deaconesses' Home and Hospital [1]	Brooklyn	Church	198	5	43	52	4,372	Rotating	8	12	July	No	Req	50	No
St. Catherine's Hospital	Brooklyn	Church	313	25	2	73	6,537	Rotating	16	24	July	No	Req	23	No
St. John's Hospital	Brooklyn	Church	234	55	6	39	5,012	Rotating	12	36	July	No	Req	50	No
St. Mary's Hospital	Brooklyn	Church	306	57	23	20	5,254	Rotating	12	24	July	No	Req	16	No
St. Peter's Hospital	Brooklyn	Church	220	54	17	29	2,607	Rotating	6	12	July	No	None	22	No
Trinity Hospital	Brooklyn	NPAssn	125	67	30	3	3,133	Rotating	14	12&24	July	No	Req	44	No
Wyckoff Heights Hospital	Brooklyn	NPAssn	200	8	67	25	5,314	Rotating	12	24	(1-q)	No	Req	15	No
Buffalo City Hospital [1]	Buffalo	CyCo	1,063	66	30	4	12,868	Rotating	20	12-36	July	No	Req	21	No
Buffalo General Hospital	Buffalo	NPAssn	465	13	36	51	10,968	Rotating	14	12	July	(70)	Req	36	No
Deaconess Hospital	Buffalo	NPAssn	225	1	31	68	4,830	Rotating	6	12	July	No	Op	25	$25
Mercy Hospital	Buffalo	Church	200	40		60	4,811	Rotating	6	12	July	No	Req	23	$25
Millard Fillmore Hospital	Buffalo	NPAssn	309	21	34	45	7,211	Rotating	7	12	July	No	Req	46	$15
Arnot-Ogden Memorial Hospital	Elmira	NPAssn	213	9	55	36	4,369	Mixed	3	12	July	No	Req	33	$20(k)
St. Joseph's Hospital	Elmira	Church	216	7	23	70	4,795	Rotating	4	12	July	No	None	22	$25
Ideal Hospital	Endicott	City	146	3		97	3,326	Mixed	4	12	July	No	None	35	$25(p)
Flushing Hospital and Dispensary	Flushing	NPAssn	258	41		59	6,601	Rotating	8	24	July	No	Req	20	$25

Numerical and other references will be found on pages 701 and 702.

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
NEW YORK—Continued															
Jamaica Hospital	Jamaica	NPAssn	177	38	3	59	5,306	Rotating	8	18	July	No	Req	36	No
Mary Immaculate Hospital	Jamaica	Church	310	5	38	57	7,298	Rotating	16	24	July	No	Req	36	No
Charles S. Wilson Memorial Hospital	Johnson City	NPAssn	350	4		96	5,516	Rotating	6	12	July	No	Req	51	$25
Kingston Hospital [1]	Kingston	NPAssn	133	3	71	26	3,159	Rotating	3	12	Jan. & July	(71)	None	25	$25(m)
Our Lady of Victory Hospital	Lackawanna	Church	151	12	49	39	1,939	Rotating	3	12	July	No	Req	16	$50
St. John's Long Island City Hospital	Long Island City	Church	301	4	73	23	5,988	Rotating	16	24	July	No	Req	51	No
Nassau Hospital	Mineola	NPAssn	205	2	84	14	5,689	Rotating	6	18	Jan. & July	No	None	21	$50
Mount Vernon Hospital [1]	Mount Vernon	NPAssn	180	22	17	61	4,438	Rotating	6	24	July	No	Req	17	$25-50
New Rochelle Hospital	New Rochelle	NPAssn	147	6	32	62	4,557	Rotating	6	12	July	No	Req	32	$25
Bellevue Hospital [2]	New York	City	2,333	100			68,910	Straight	140	12-24	Jan. & July	No	Req	38	$15
Beth David Hospital	New York	NPAssn	156	62	23	25	2,529	Rotating	7	24	July	No	Req	25	No
Beth Israel Hospital [1]	New York	NPAssn	444	43	56	1	9,961	Rotat.&Str	28	12&24	July	No	Op	42	No
Bronx Hospital	New York	NPAssn	362	14	25	61	10,097	Rotating	18	27	(1-r)	No	Req	35	No
Columbus Hospital	New York	Church	300	52	26	22	4,703	Rotating	9	24	Jan.	No	Req	19	No
Flower-Fifth Avenue Hospital [1]	New York	NPAssn	347	..	..	..	.....	Rotating	20	24	July	(72)	Req	..	No
Fordham Hospital	New York	City	609	100			17,430	Mix&Str	28	12&24	(1-b)	No	Op	51	$15
French Hospital	New York	NPAssn	300	25	5	70	3,942	Straight	12	24	(1-d)	No	Op	15	No
Gouverneur Hospital	New York	City	229	100			5,193	Rotating	18	24-30	Jan. & July	No	Req	32	$15
Harlem Hospital [1]	New York	City	325	100			13,435	Rotating	48	24	Jan. & July	No	Op	25	$15
Hospital for Joint Diseases	New York	NPAssn	355	20	33	47	5,841	Rotating	12	24	Jan. & July	(73)	Req	41	No
Knickerbocker Hospital	New York	NPAssn	204	7	73	20	3,960	Rotating	8	24	(1-d)	No	Op	38	No
Lebanon Hospital	New York	NPAssn	154	58	36	6	3,169	Straight	12	24	(1-h)	No	Req	44	No
Lenox Hill Hospital [1]	New York	NPAssn	595	55		45	10,120	Rotat.&Mix	24	24	Jan. & July	No	Op	38	(r)
Lincoln Hospital	New York	City	265	100			8,740	Rotating	20	24	Jan. & July	No	Req	36	$15
Metropolitan Hospital [1]	New York	City	1,425	100			14,490	Rotat.&Str	44	24	July	(74)	Req	19	$15
Misericordia Hospital	New York	Church	319	11	40	49	5,035	Rotating	7	18	Jan. & July	No	Op	35	$10
Montefiore Hosp. for Chronic Diseases [1]	New York	NPAssn	711	79	8	13	2,619	Rotat.&Str	11	12	Jan. & July	No	Req	73	$25
Morrisania City Hospital [1]	New York	City	539	100			15,011	Rotating	35	24	Jan. & July	No	Op	27	$15
Mount Sinai Hospital [1]	New York	NPAssn	572	57	16	27	13,858	Mixed&Str	26	12&29	July	No	Op	52	(m)
New York City Hospital	New York	City	1,060	100			10,111	Rotating	36	24	Jan. & July	No	Req	20	$15
New York Hospital [1]	New York	NPAssn	1,010	8	73	19	14,429	Straight	36	12	July	(75)	Req	57	No
New York Infirmary for Women and Children [2]	New York	NPAssn	162	36	7	57	3,549	Rotating	5	12	(1-s)	No	Req	70	(j)
New York Polyclinic Medical School and Hospital	New York	NPAssn	346	17	70	13	7,922	Rotating	8	24	(1-d)	No	Req	23	No
New York Post-Graduate Medical School and Hospital [1]	New York	NPAssn	411	13	3	84	9,372	Straight	28	12-27	(1-d)	No	Req	26	No
Presbyterian and Sloane Hospitals [1]	New York	NPAssn	965	33	42	25	17,754	Straight	43	12-25	Varies	No	Req	45	No
Roosevelt Hospital	New York	NPAssn	384	43	9	48	6,162	Straight	21	24&36	Jan. & July	No	Req	32	No
St. Francis Hospital	New York	Church	425	57	21	22	5,426	Mixed	8	24	Jan. & July	No	None	26	No
St. Luke's Hospital [1]	New York	Church	507	62		38	7,772	Mixed	16	24	Jan. & July	No	Req	47	No
St. Vincent's Hospital	New York	Church	465	57	28	15	10,012	Rotating	32	24	Jan. & July	No	Req	31	No
Sydenham Hospital [1]	New York	NPAssn	200	10	40	50	5,083	Rotating	16	12&24	Jan. & July	No	Op	28	No
United Hospital	Port Chester	NPAssn	300	2	37	61	4,108	Rotating	4	12	July	No	Req	32	$40(l)
Vassar Brothers Hospital	Poughkeepsie	NPAssn	225	22		78	4,383	Rotating	4	12	July	No	Req	20	$30(k)
Genesee Hospital	Rochester	NPAssn	220	29	28	43	4,454	Rotating	8	24	July	No	Req	39	$10-15
Highland Hospital	Rochester	NPAssn	200	5	86	9	3,978	Rotating	6	24	July	No	Req	35	$22.50
Rochester General Hospital	Rochester	NPAssn	365	24	9	67	8,013	Rotating	8	12	July	No	Req	65	(b)
St. Mary's Hospital	Rochester	Church	220	16	31	53	4,694	Rotating	5	12	July	No	Req	29	$20
Strong Memorial and Rochester Municipal Hospitals [1]	Rochester	NP-Cy	645	49	39	12	13,053	Straight	30	12	July	No	Req	66	No
Ellis Hospital [1]	Schenectady	NPAssn	285	4		96	7,424	Rotating	6	12	July	No	Req	32	No
U. S. Marine Hospital (Staten Island)	Stapleton	USPHS	288	100			2,936	Rotating	10	12	July	(76)	Req	40	(d)
St. Vincent's Hospital	Staten Island	Church	253	59	1	40	5,284	Rotating	6	18	(1-d)	No	Req	27	No
Staten Island Hospital [1]	Staten Island	NPAssn	286	3	79	18	5,581	Rotating	7	21	(1-d)	No	Req	26	No
General Hospital of Syracuse	Syracuse	NPAssn	110	16	59	25	2,552	Rotating	3	12	July	No	Req	34	$10
Hospital of the Good Shepherd, Syracuse University	Syracuse	NPAssn	242	2	45	53	5,066	Rotating	9	12	July & Aug.	(77)	None	40	No
St. Joseph Hospital [1]	Syracuse	Church	231	38	17	45	6,129	Rotating	6	12	July	No	Req	40	No
Syracuse Memorial Hospital	Syracuse	NPAssn	250	41		59	5,800	Rotating	7	12	July	No	Req	40	No
Samaritan Hospital	Troy	NPAssn	181	5	70	25	2,709	Rotating	4	12	(1-i)	(78)	Req	32	$25(s)
Troy Hospital [1]	Troy	Church	294	9	42	49	3,400	Rotating	4	12	July	(68)	Req	26	$30
Grasslands Hospital [1]	Valhalla	County	932	87	13		7,043	Rotating	20	24	Jan. & July	No	Req	64	No
St. Agnes Hospital	White Plains	Church	143	3	17	80	2,679	Rotating	3	12	July	No	Req	28	$25
St. John's Riverside Hospital	Yonkers	NPAssn	200	73		27	5,674	Rotating	5	12	Jan. & July	No	Op	43	$50
St. Joseph's Hospital	Yonkers	Church	197	38	13	49	2,796	Rotating	6	12	July	No	Req	18	No
Yonkers General Hospital	Yonkers	NPAssn	176	31	51	18	2,623	Rotating	4	12	Jan. & July	No	Req	17	(t)
NORTH CAROLINA															
Duke Hospital	Durham	NPAssn	456	66	24	10	8,806	Straight	33	12	July & Sept.	No	Req	57	No
Lincoln Hospital (col.)	Durham	NPAssn	108	64	18	18	1,818	Mixed	4	12	June	No	Req	25	$5
Watts Hospital	Durham	NPAssn	225	32	33	35	5,498	Rotating	7	12	July	No	Req	28	$15
Highsmith Hospital	Fayetteville	NPAssn	125	17	46	37	2,942	Mixed	3	12	July	No	Req	24	$25
L. Richardson Memorial Hospital (col.)	Greensboro	NPAssn	64	27	43	30	694	Mixed	2	12	July & Oct.	No	Req	20	$10
Rex Hospital	Raleigh	NPAssn	120	17	38	45	3,805	Rotating	4	12	July	No	Req	18	$25
St. Agnes Hospital (col.)	Raleigh	Church	100	62	15	23	1,063	Mixed	2	12	July & Oct.	No	Req	20	$100 yr.
Park View Hospital [1]	Rocky Mount	NPAssn	120	24	11	65	2,538	Mixed	3	12	July	No	Req	23	$25
James Walker Memorial Hospital	Wilmington	NPAssn	152	54	5	41	4,763	Rotating	4	12	July	No	Req	18	$25(l)
City Memorial Hospital	Winston-Salem	City	191	43	9	48	4,088	Mixed	6	12	July	(79)	Req	23	$15(s)
NORTH DAKOTA															
St. John's Hospital	Fargo	Church	165	6	26	68	3,698	Mixed	2	12	July	No	None	32	$20
Trinity Hospital	Minot	Church	186		45	55	3,431	Rotating	4	12	July	No	None	75	$25
OHIO															
City Hospital	Akron	NPAssn	350	43	7	50	7,983	Rotating	12	12	July	(80)	Req	52	$20
Peoples Hospital	Akron	NPAssn	156	57	9	34	3,207	Rotating	4	12	July	(80)	Req	29	$25
St. Thomas Hospital	Akron	Church	185	31	33	36	4,901	Rotating	4	12	July	No	None	36	$15
Aultman Hospital [1]	Canton	NPAssn	161	16	64	20	3,161	Rotating	4	12	July	No	None	23	$40(j)
Mercy Hospital	Canton	Church	214	26	59	15	6,165	Rotating	4	12	July	No	Req	30	$25
Bethesda Hospital	Cincinnati	Church	244		30	70	5,517	Rotating	7	12	July	(81)	Req	16	$25(k)
Christ Hospital	Cincinnati	Church	369	3	70	27	6,301	Rotating	9	12	July	(82)	Req	21	$22.50
Cincinnati General Hospital [1]	Cincinnati	City	925	80	13	7	16,036	Rotating	36	12	July	(83)	Req	42	No
Deaconess Hospital	Cincinnati	Church	175	5	40	55	4,052	Rotating	5	12	July	(84)	Req	25	$25
Good Samaritan Hospital	Cincinnati	Church	535	20	22	28	11,165	Rotating	13	12	June	No	Req	16	$12.50
Jewish Hospital	Cincinnati	NPAssn	262	19	43	38	5,201	Rotating	9	12	July	(85)	Req	31	$20
St. Mary's Hospital	Cincinnati	Church	220	43	50	7	4,475	Rotating	6	12	July	No	Req	24	$25
City Hospital [1]	Cleveland	City	1,670	97	2	1	14,445	Rotating	36	12	July	No	Req	38	No

Numerical and other references will be found on pages 701 and 702.

V 10
1936

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
OHIO—Continued															
Lutheran Hospital	Cleveland	Church	142	5	40	55	3,407	Rotating	3	12	July	No	None	30	$30
Mount Sinai Hospital [1]	Cleveland	NPAssn	270	34	12	54	7,625	Rotating	12	12	July	(87)	Op	26	$10
St. Alexis Hospital	Cleveland	Church	220	35	4	61	4,154	Rotating	8	12	July	(86)	Req	38	$10
St. John's Hospital	Cleveland	Church	210	12	10	78	4,838	Rotating	6	12	July	No	None	32	$12.50
St. Luke's Hospital	Cleveland	Church	392	23	2	75	9,310	Rotating	16	12	July	No	Req	24	No
St. Vincent Charity Hospital	Cleveland	Church	301	42	3	55	5,409	Rotating	12	12	July	(86)	Req	34	No
University Hospitals [1]	Cleveland	NPAssn	972	37	14	49	16,068	Rotat & Str	40	12-24	(1-k)	(88)	Req	54	(u)
Woman's Hospital [1]	Cleveland	NPAssn	120	9	8	83	1,992	Rotating	3	12	July	(89)	None	31	$25
Grant Hospital	Columbus	NPAssn	303	7	58	35	5,847	Rotating	8	12	July	No	None	21	$25
Mount Carmel Hospital	Columbus	Church	239	9	6	85	4,065	Rotating	5	12	July	(90)	None	17	$25
St. Francis Hospital	Columbus	Church	158	74	17	9	3,350	Rotating	8	12	July	(91)	None	37	$10
Starling-Loving University Hospital [1]	Columbus	State	276	46	19	35	5,061	Rotating	9	12	July	No	Req	41	(m)
White Cross Hospital	Columbus	Church	269	19		81	5,033	Mixed	6	12	July	No	None	33	$25
Good Samaritan Hospital	Dayton	Church	250	28	2	70	2,803	Mixed	4	12	July	No	Op	26	$25
Miami Valley Hospital	Dayton	NPAssn	371	33	26	41	7,677	Rotating	8	12	July	(92)	None	47	$25
St. Elizabeth Hospital	Dayton	Church	400	61	20	19	5,782	Rotating	7	12	July	No	None	24	$25
Huron Road Hospital [1]	East Cleveland	NPAssn	202	16	3	81	2,827	Rotating	6	12	July	No	Req	51	$25
Mercy Hospital	Hamilton	Church	200	20	60	20	2,846	Rotating	2	12	July	No	Req	22	$25(v)
Springfield City Hospital	Springfield	City	258	38	23	39	3,685	Mixed	6	12	July	No	Req	25	$30
Flower Hospital	Toledo	Church	125	5	35	60	2,002	Rotating	3	12	July	No	Req	38	$25
Lucas County General Hospital	Toledo	County	315	100			5,007	Rotating	10	12	July	No	Req	36	$25
Mercy Hospital	Toledo	Church	132	6	76	18	2,446	Rotating	3	12	July	No	Req	26	$25
St. Vincent's Hospital [1]	Toledo	Church	345	36	32	32	9,828	Rotating	11	12	July	No	Req	50	$25
Toledo Hospital	Toledo	NPAssn	275	4	58	38	2,766	Rotating	4	12	July	No	None	46	$25
St. Elizabeth's Hospital	Youngstown	Church	261	2	20	78	4,969	Rotating	6	12	July	No	None	24	$20(k)
Youngstown Hospital	Youngstown	NPAssn	448	2	71	27	7,822	Rotating	14	12	July	No	Op	33	$20
OKLAHOMA															
Oklahoma City General Hospital	Oklahoma City	Corp	100			37	63	3,387	Rotating	4	12	July	No	Req	16	$25
St. Anthony Hospital	Oklahoma City	Church	340	11	54	35	7,766	Rotating	8	12	July	No	Op	33	$15
State University Hospitals [1]	Oklahoma City	State	510	62	32	6	6,160	Rotating	20	24	July	No	Req	53	$10
Wesley Hospital	Oklahoma City	Part	175		50	50	4,402	Rotating	4	12	July	No	None	19	$25
Morningside Hospital	Tulsa	Corp	250	10	30	60	5,382	Rotating	6	12	July	No	Req	91	$25
St. John's Hospital	Tulsa	Church	278	33	33	34	4,482	Rotating	4	12	July	No	Req	36	$25(xx)
OREGON															
Emanuel Hospital [1]	Portland	Church	280	..	..	..	6,357	Rotating	9	12	June	(93)	None	37	$20
Good Samaritan Hospital	Portland	Church	375	3	3	94	7,373	Rotating	9	12	July	No	Req	41	$20
Portland Sanitarium and Hospital	Portland	Church	134	20	40	40	3,942	Rotating	3	12	July	No	None	65	$75(a)
St. Vincent's Hospital	Portland	Church	416	13	42	45	9,333	Rotating	8	12	July	No	None	42	$25
Univ. of Oregon Medical School Hosps.	Portland	Co-Sta	405	100			8,701	Rotating	16	12	July	(94)	Req	65	$20
PENNSYLVANIA															
Abington Memorial Hospital	Abington	NPAssn	275	30	22	48	5,299	Rotating	9	24	July	No	Req	48	No
Allentown Hospital [1]	Allentown	NPAssn	325	37	16	47	6,918	Rotating	10	12	July	No	Req	35	No
Sacred Heart Hospital	Allentown	Church	360	58	6	36	3,828	Rotating	6	12	July	(95)	Req	28	No
Altoona Hospital	Altoona	NPAssn	180	41	4	55	2,581	Rotating	5	12	July	No	Req	42	$25
Mercy Hospital	Altoona	NPAssn	128	45	36	19	2,798	Rotating	4	12	July	No	Req	18	$25
St. Luke's Hospital	Bethlehem	NPAssn	210	47	11	42	4,765	Rotating	7	12	July	No	Req	41	(j)
Bryn Mawr Hospital	Bryn Mawr	NPAssn	262	12	26	62	4,670	Rotating	8	12	July	No	Req	49	No
Chester Hospital [1]	Chester	NPAssn	285	59	3	38	4,127	Rotating	6	12	July	No	Req	18	$15
G. F. Geisinger Memorial Hospital	Danville	NPAssn	198	53	31	44	4,443	Rotating	10	12	July	No	Req	30	No
Fitzgerald Mercy Hospital [1]	Darby	Church	248	62	18	20	3,206	Rotating	6	12	July	No	Req	33	No
Easton Hospital [1]	Easton	NPAssn	220	35	5	60	4,927	Rotating	6	12	July	No	Req	50	(i)
Hamot Hospital	Erie	NPAssn	255	45	14	41	5,594	Rotating	7	12	July	No	Req	30	$25
St. Vincent's Hospital	Erie	NPAssn	215	61		39	5,787	Rotating	8	12	July	No	Req	22	$15(k)
Harrisburg Hospital	Harrisburg	NPAssn	275	45	6	49	5,739	Rotating	8	12	July	No	Req	24	$25
Harrisburg Polyclinic Hospital	Harrisburg	NPAssn	180	36	3	61	3,492	Rotating	4	12	July	No	Req	33	$50
Conemaugh Valley Memorial Hospital	Johnstown	NPAssn	280	42	16	42	5,460	Rotating	6	12	July	No	Req	21	No
Lancaster General Hospital [1]	Lancaster	NPAssn	265	40	4	56	5,588	Rotating	6	12	July	No	Req	64	$17.50
St. Joseph's Hospital	Lancaster	Church	191	44	24	32	3,548	Rotating	5	12	July	No	Req	40	$17.50
McKeesport Hospital	McKeesport	NPAssn	263	38	2	60	4,164	Rotating	6	12	July	No	Req	25	$25
Jameson Memorial Hospital	New Castle	NPAssn	164	46	17	37	3,027	Rotating	4	12	July	No	None	35	$15
Montgomery Hospital	Norristown	NPAssn	110	49	7	44	3,067	Rotating	4	12	July	No	Req	24	$30
Chestnut Hill Hospital	Philadelphia	NPAssn	114	16	33	51	1,844	Rotating	4	12	July	No	Req	18	$50
Frankford Hospital	Philadelphia	NPAssn	142	16	19	65	3,338	Rotating	7	12	July	No	Req	16	No
Germantown Dispensary and Hospital	Philadelphia	NPAssn	360	18	32	50	7,147	Rotating	12	24	July	No	Req	26	No
Graduate Hospital of the University of Pennsylvania	Philadelphia	NPAssn	475	36	9	55	7,186	Rotating	8	24	July	(96)	Req	49	No
Hahnemann Hospital	Philadelphia	NPAssn	592	50	11	39	13,671	Rotating	24	12	July	No	Req	28	No
Hospital of the Protestant Episcopal Church	Philadelphia	Church	530	90	3	7	6,918	Rotating	16	24	Jan. & July	No	Req	44	No
Hospital of the Univ. of Pennsylvania [1]	Philadelphia	State	598	36	24	40	16,295	Rotating	28	24	July	No	Req	67	No
Hosp. of the Woman's Medical College [3]	Philadelphia	NPAssn	173	24	28	48	9,545	Rotating	6	12	July & Sept.	No	Req	41	No
Jefferson Medical College Hospital	Philadelphia	NPAssn	688	55	19	26	12,869	Rotating	28	27	June	No	Req	55	No
Jewish Hospital [1]	Philadelphia	NPAssn	426	34	12	54	7,980	Rotating	18	24	June	(97)	Req	52	No
Lankenau Hospital	Philadelphia	NPAssn	300	30	13	57	4,423	Rotating	10	24	July	(98)	Req	38	No
Mercy Hospital [1] (col.)	Philadelphia	NPAssn	170	74	29	6	1,691	Rotating	5	12	July	(99)	Req	28	$5
Methodist Episcopal Hospital [1]	Philadelphia	Church	242	25	28	47	3,725	Rotating	8	12	July	No	Req	21	No
Misericordia Hospital [1]	Philadelphia	Church	220	11	54	35	5,144	Rotating	9	12	July	No	Req	33	No
Mount Sinai Hospital	Philadelphia	NPAssn	316	21	19	60	7,649	Rotating	14	12	June	No	Req	55	No
Northeastern Hospital	Philadelphia	NPAssn	162	10	7	83	2,518	Rotating	4	12	July	No	Req	17	$20
Pennsylvania Hospital	Philadelphia	NPAssn	560	43	32	25	10,965	Rotating	18	24	(1-l)	(100)	Req	50	No
Philadelphia General Hospital [1]	Philadelphia	City	2,400	100			26,881	Rotating	60	24	July	No	Req	53	No
Presbyterian Hospital	Philadelphia	Church	425	30	12	58	5,069	Rotating	12	24	July	No	Req	38	No
St. Agnes Hospital	Philadelphia	Church	346	28	47	25	5,804	Rotating	10	12	July	No	Req	15	No
St. Joseph's Hospital	Philadelphia	Church	180	36	23	41	2,732	Rotating	6	12	July	No	Req	31	No
St. Luke's and Children's Hospital	Philadelphia	NPAssn	259	33	19	48	4,948	Rotating	9	12	July	No	Req	33	No
St. Mary's Hospital	Philadelphia	Church	278	58	6	36	4,431	Rotating	7	12	July	No	Req	39	No
Temple University Hospital	Philadelphia	NPAssn	456	35	30	35	9,360	Rotating	18	24	July	(101)	Req	29	No
Woman's Hospital [2]	Philadelphia	NPAssn	190	30	15	55	3,946	Rotating	6	12	July & Sept.	(102)	Req	33	No
Women's Homeopathic Hospital	Philadelphia	NPAssn	200	66	14	20	3,187	Rotating	4	12	July	No	Req	32	$20
Allegheny General Hospital [1]	Pittsburgh	NPAssn	405	59	3	38	6,573	Rotating	16	12	July	No	Req	28	No
Homeopathic Medical and Surgical Hospital and Dispensary	Pittsburgh	NPAssn	325	32	2	66	4,497	Rotating	7	12	July	No	Req	22	No
Mercy Hospital	Pittsburgh	Church	670	35	35	30	10,045	Rotating	24	12	July	(103)	Req	32	No
Montefiore Hospital	Pittsburgh	NPAssn	225	44	35	21	5,827	Rotating	8	12	July	No	Req	38	$10
Passavant Hospital [1]	Pittsburgh	Church	140	39	6	55	2,557	Rotating	5	12	July	No	Req	33	$10
Pittsburgh Hospital [1]	Pittsburgh	NPAssn	300	35	20	45	4,053	Rotating	6	12	July	No	Req	25	No
Presbyterian Hospital [1]	Pittsburgh	NPAssn	164	39	4	57	2,427	Rotating	18	12	July	(104)	Req	27	No
St. Francis Hospital	Pittsburgh	Church	587	29	13	58	7,282	Rotating	16	12	July	(105)	Req	32	No
St. John's General Hospital	Pittsburgh	Church	202	21	5	74	4,364	Rotating	5	12	July	No	Req	31	No

Numerical and other references will be found on pages 701 and 702.

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage Free	Part Pay	Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
PENNSYLVANIA—Continued															
St. Joseph's Hospital	Pittsburgh	Church	140	35	50	15	2,058	Rotating	4	12	July	No	Req	29	(w)
St. Margaret Memorial Hospital [1]	Pittsburgh	Church	150	55	27	18	2,083	Rotating	4	12	July	No	Req	30	No
South Side Hospital	Pittsburgh	NPAssn	225	36	39	25	4,743	Rotating	7	12	July	No	Req	17	No
Western Pennsylvania Hospital [1]	Pittsburgh	NPAssn	651	42		58	10,126	Rotating	17	12	July	No	Req	18	No
Pottsville Hospital [1]	Pottsville	NPAssn	140	50	3	47	2,880	Rotating	4	12	July	No	Req	27	$25
Homoeopathic Med. and Surgical Hosp.	Reading	NPAssn	114	56	2	42	2,353	Rotating	4	12	June	No	Req	19	$25
Reading Hospital	Reading	NPAssn	268	44	2	54	5,370	Rotating	8	12	July	No	Req	61	No
St. Joseph's Hospital	Reading	Church	205	42	2	56	4,102	Rotating	6	12	July	(106)	Req	36	No
Robert Packer Hospital	Sayre	NPAssn	325	44	2	54	6,614	Rotating	8	12	Jan. & July	No	Req	57	No
Hahnemann Hospital	Scranton	NPAssn	125	55	7	38	2,928	Rotating	4	12	July	No	Req	21	$13.50
Moses Taylor Hospital	Scranton	NPAssn	100	..	..	..	1,669	Rotating	3	12	July	(107)	Req	41	$27
Scranton State Hospital	Scranton	State	188	74	2	24	3,772	Rotating	8	12	July	No	Req	24	$8.33
Uniontown Hospital	Uniontown	NPAssn	210	27	6	67	4,183	Rotating	5	12	July	No	Req	35	$25
Washington Hospital	Washington	NPAssn	166	39	5	56	2,789	Rotating	4	12	July	No	Req	46	$25
Chester County Hospital	West Chester	NPAssn	159	50	18	32	2,477	Rotating	4	12	July	No	Req	38	$25
Mercy Hospital [1]	Wilkes-Barre	Church	220	64		36	5,804	Rotating	6	12	July	No	Req	22	No
Wilkes-Barre General Hospital	Wilkes-Barre	NPAssn	407	55	5	40	8,318	Rotating	10	12	July	No	Req	27	No
Columbia Hospital [1]	Wilkinsburg	Church	213	41	1	58	3,423	Rotating	5	12	July	No	Req	37	$20
Williamsport Hospital [1]	Williamsport	NPAssn	273	46	5	49	4,513	Rotating	6	12	July	No	Req	28	No
Windber Hospital [1]	Windber	NPAssn	117	10	70	20	2,720	Rotating	2	12	July	No	Req	25	$25
York Hospital	York	NPAssn	209	43	8	49	4,400	Rotating	6	12	July	No	Req	28	$25
RHODE ISLAND															
Memorial Hospital	Pawtucket	NPAssn	196	44	5	51	2,937	Rotating	6	12	June & Aug.	No	Req	30	No
Homeopathic Hospital	Providence	NPAssn	200	30	27	43	4,513	Rotating	4	12	July	No	Req	21	$50
Rhode Island Hospital	Providence	NPAssn	600	60	15	25	10,301	Mix&Str	28	12&24	Monthly	(108)	Req	35	No
St. Joseph's Hospital	Providence	Church	350	39	20	41	4,099	Rotating	6	24	(1-h)	No	Req	27	No
SOUTH CAROLINA															
Roper Hospital	Charleston	NPAssn	300	63	4	33	6,605	Rotating	14	12	July	No	Req	28	$10
Columbia Hospital	Columbia	County	305	28	20	52	5,300	Mixed	4	12	July	No	Req	20	$35(l)
Greenville General Hospital	Greenville	City	200	51	13	36	4,221	Mixed	5	12	July	No	Req	27	$15
TENNESSEE															
Baroness Erlanger Hospital	Chattanooga	CyCo	246	67	1	32	6,753	Rotating	12	12	July	(109)	Req	26	$25
Knoxville General Hospital	Knoxville	City	300	68		32	7,789	Rotating	9	18	(1-d)	No	Req	23	$25
Baptist Memorial Hospital	Memphis	Church	400	31	17	52	13,735	Rotating	12	18	(1-d)	No	None	18	$22
John Gaston Hospital	Memphis	City	400	98		2	14,043	Rotating	18	18	Monthly	No	Req	19	$20
Methodist Hospital	Memphis	Church	185	28	20	52	5,777	Mixed	3	12	(1-a)	No	Req	19	$50
St. Joseph's Hospital	Memphis	Church	236	25	41	34	4,199	Rotating	4	12	(1-d)	No	Req	19	$35
George W. Hubbard Hospital (col.)	Nashville	NPAssn	172	81	13	6	2,125	Rotating	6	12	July & Sept.	No	Req	21	$15
Nashville General Hospital	Nashville	City	305	84		16	6,811	Rotating	10	12	July	No	Req	35	$25
St. Thomas Hospital	Nashville	Church	225	7	42	51	4,569	Rotating	5	12	July	No	None	28	$40
Vanderbilt University Hospital	Nashville	NPAssn	210	34	34	32	4,737	Straight	11	12	July	(110)	Op	61	$23.75
TEXAS															
Hotel Dieu Hospital	Beaumont	Church	180	12	33	55	2,455	Mixed	2	12	July	No	Req	20	$50
Baylor University Hospital [1]	Dallas	Church	300	20	20	60	11,578	Rotating	13	12	July	(111)	Req	30	$25
Methodist Hospital	Dallas	Church	100	1	9	90	2,945	Rotating	4	12	July	No	Req	21	$25(l)
Parkland Hospital [1]	Dallas	CyCo	245	94	6		8,410	Rotating	20	18	Jan. & July	No	Req	21	$10
St. Paul's Hospital	Dallas	Church	300	18	19	63	7,653	Rotating	9	12	July	No	Req	20	$25
El Paso City-County Hospital	El Paso	CyCo	164	98	2		2,987	Rotating	4	12	July	No	Req	40	$25(j)
William Beaumont General Hospital	El Paso	Army	591	100			5,985	Rotating	2	12	July	No	Op	85	(d)
City and County Hospital	Fort Worth	CyCo	111	100			3,427	Rotating	4	12	July	No	Req	32	$25
Harris Clinic Hospital [1]	Fort Worth	Indiv	100	20	50	30	1,240	Mixed	2	12	July	No	Req	24	No
St. Joseph's Hospital	Fort Worth	Church	300	11	15	74	5,832	Rotating	4	12	July	No	None	25	$25
John Sealy Hospital [1]	Galveston	City	374	70	5	25	5,759	Rotating	8	12	June & July	No	Req	57	No
St. Mary's Infirmary	Galveston	Church	225	17	50	33	3,672	Mixed	3	12	June	No	None	22	$30
Hermann Hospital	Houston	NPAssn	196	75		25	3,541	Rotating	6	12	July	No	Req	36	$25
Jefferson Davis Hospital [1]	Houston	CyCo	198	100			7,474	Rotating	16	24	July	No	Req	28	$25-50
Medical and Surgical Memorial Hospital	San Antonio	NPAssn	115	2	3	95	2,914	Mixed	3	12	July	No	Req	37	$25
Robert B. Green Memorial Hospital	San Antonio	County	140	100			4,995	Rotating	10	12	July	No	Req	16	$10
Santa Rosa Hospital	San Antonio	Church	272	9	15	76	4,662	Rotating	6	12	July	(112)	Req	20	$25
Station Hospital	San Antonio	Army	650	100			7,540	Rotating	8	12	July	No	Op	80	(d)
Gulf, Colorado and Santa Fe Hospital	Temple	NPAssn	107			100	1,167	Rotating	1	12	July	(113)	Op	43	$50
Kings Daughters Clinic and Hospital	Temple	NPAssn	118	..	..	..	2,480	Mixed	2	12	July	No	Req	22	$50(h)
Scott and White Hospital	Temple	Corp	175	..	..	..	3,116	Rotating	5	12	July	(113)	Req	26	$50
UTAH															
Thomas D. Dee Memorial Hospital	Ogden	Church	185	3	7	90	5,173	Rotating	5	12	July	No	Req	17	$25
Dr. W. H. Groves Latter-Day Saints Hospital [1]	Salt Lake City	Church	430	10		90	6,044	Rotating	9	24	July	(114)	Req	20	(x)
Holy Cross Hospital	Salt Lake City	Church	270	4	20	76	3,633	Mixed	2	12	July	No	Op	23	$15(m)
St. Mark's Hospital [1]	Salt Lake City	Church	160	4	16	80	2,632	Mixed	2	12	July	No	Op	29	$25(i)
Salt Lake General Hospital	Salt Lake City	County	246	91		9	3,617	Rotating	8	12	July	No	Req	30	$20(j)
VERMONT															
Bishop DeGoesbriand Hospital	Burlington	Church	122	68	10	22	2,787	Rotating	3	12	July	No	None	21	$25
Mary Fletcher Hospital	Burlington	NPAssn	150	28	40	32	3,804	Rotating	5	12	July & Sept.	No	Req	41	$25
VIRGINIA															
Hospital of St. Vincent de Paul	Norfolk	Church	250	36	21	43	4,202	Rotating	5	12	July	No	Req	21	$25
Norfolk General Hospital	Norfolk	NPAssn	200	24	26	50	4,821	Mixed	4	12	July	No	Req	18	$25
U. S. Marine Hospital	Norfolk	USPHS	300	100			2,726	Rotating	8	12	July	(115)	Op	76	(d)
Johnston-Willis Hospital [1]	Richmond	Corp	127	4	5	91	3,170	Rotating	3	12	July	No	Req	15	$15
Medical College of Virginia, Hospital Division [1] (Memorial, Dooley, St. Philip and Crippled Children's Hospitals)	Richmond	NPAssn	442	7	81	12	9,492	Mix& Rotat	22	12	July	(116)	Req	33	No
Stuart Circle Hospital	Richmond	Corp	102	3	49	48	2,764	Rotating	4	12	July	No	Req	40	$25
Jefferson Hospital	Roanoke	Corp	110	..	40	60	2,146	Mixed	2	12	July	No	Req	16	$45
University of Virginia Hospital [1]	University	State	311	24	46	30	6,620	Rotating	20	12	July	(117)	Req	34	No
WASHINGTON															
Columbus Hospital	Seattle	Church	230	20	60	20	2,467	Rotating	3	12	July	No	None	23	$30
King County Hospital Unit No. 1 (Harborview)	Seattle	County	445	100			10,682	Rotating	24	24	July	(118)	Req	42	$30
Providence Hospital	Seattle	Church	470	4	10	86	6,155	Rotating	6	12	July	(119)	Req	32	$30
Seattle General Hospital	Seattle	NPAssn	120	5	20	75	3,056	Mixed	3	12	July	(120)	None	26	$30
Swedish Hospital	Seattle	NPAssn	260		10	90	4,289	Rotating	8	12	July & Oct.	(121)	Req	25	$30

Numerical and other references will be found on pages 701 and 702.

V 10
1936

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
WASHINGTON—Continued															
U. S. Marine Hospital	Seattle	USPHS	400	100			3,169	Rotating	8	12	July	(122)	Req	74	(d)
Virginia Mason Hospital	Seattle	NPAssn	180			100	3,098	Rotating	4	12	July	No	None	38	$40
Deaconess Hospital	Spokane	Church	227	..	..	..	5,002	Rotating	4	12	July	(123)	Req	27	$25
Sacred Heart Hospital	Spokane	Church	340	8	32	60	7,174	Mixed	5	12	July	(124)	None	18	$25
St. Luke's Hospital [1]	Spokane	NPAssn	190	10	35	55	2,830	Rotating	4	12	July	(125)	None	29	$35
Pierce County Hospital	Tacoma	County	230	100			3,353	Mixed	2	12	July	(126)	Op	19	$25-45
St. Joseph's Hospital	Tacoma	Church	350	23	18	59	3,573	Rotating	3	12	July	No	Req	23	$30
Tacoma General Hospital	Tacoma	NPAssn	220			100	4,106	Rotating	4	12	July	(127)	Op	35	$35
WEST VIRGINIA															
Charleston General Hospital	Charleston	Corp	200	3	6	91	5,228	Rotating	6	12	July	(128)	Req	24	$25
Chesapeake and Ohio Railway Hospital	Huntington	NPAssn	135	100			2,543	Rotating	3	12	July	No	Req	17	$30
St. Mary's Hospital	Huntington	Church	120	15	27	58	2,807	Rotating	3	12	July	No	Req	22	$30
Ohio Valley General Hospital	Wheeling	NPAssn	250	8	42	50	4,664	Rotating	6	12	July	No	Req	19	$25
Wheeling Hospital	Wheeling	Church	300	21	13	66	2,949	Rotating	4	12	July	No	Req	21	$30
WISCONSIN															
St. Elizabeth Hospital	Appleton	Church	250	7	15	78	3,350	Mixed	2	12	June & July	No	None	35	$25
St. Agnes Hospital	Fond du Lac	Church	250	22	20	58	5,061	Rotating	4	12	June	No	None	25	$25
Mercy Hospital [1]	Janesville	Church	150	20	30	50	1,805	Mixed	2	12	July	No	None	31	$12.50
La Crosse Lutheran Hospital	La Crosse	Church	129	5	10	85	2,250	Mixed	1	12	July	No	Req	17	$25
St. Francis Hospital	La Crosse	Church	355	12	33	55	4,014	Rotating	4	12	July	No	Req	45	No
Madison General Hospital	Madison	NPAssn	160	6	25	69	4,871	Rotating	4	12	July	No	None	28	$25
Methodist Hospital	Madison	Church	120	3	21	76	2,272	Rotating	3	12	July	No	Req	23	$30
St. Mary's Hospital	Madison	Church	200	20	15	65	5,039	Rotating	5	12	July	No	Req	43	$25
State of Wisconsin General Hospital [1]	Madison	State	632	88	7	5	10,979	Rotating	20	12	July	No	Req	70	No
St. Joseph's Hospital	Marshfield	Church	165	10	50	40	3,385	Mixed	2	12	July	No	Req	28	$20
Columbia Hospital	Milwaukee	NPAssn	155	9		91	2,731	Rotating	8	24	July	(129)	Req	54	$25
Evangelical Deaconess Hospital	Milwaukee	Church	150	5	39	56	3,327	Rotating	3	12	June	(130)	Op	22	$25
Milwaukee Hospital "The Passavant"	Milwaukee	Church	251	5	67	28	6,368	Rotating	7	12	July	No	Req	41	$25
Misericordia Hospital	Milwaukee	Church	140	3	5	92	2,537	Mixed	2	12	July	No	Op	20	$15
Mount Sinai Hospital	Milwaukee	NPAssn	170	16	62	22	4,797	Rotating	5	12	July	No	Req	36	$25
St. Joseph's Hospital [1]	Milwaukee	Church	395	19	34	47	5,832	Rotating	6	12	June	No	Req	24	$25
St. Luke's Hospital	Milwaukee	Church	117		53	47	2,283	Mixed	2	12	July	(131)	Op	28	$25
St. Mary's Hospital	Milwaukee	Church	217	4	12	84	4,459	Mixed	6	12	July	No	Op	28	$25
Mercy Hospital	Oshkosh	Church	140	12	23	65	3,934	Rotating	3	12	July	No	Op	35	$25
St. Mary's Hospital	Racine	Church	200	2	25	73	3,690	Mixed	2	12	July	No	None	32	$25
St. Mary's Hospital	Superior	Church	122	2	17	81	1,831	Rotating	2	12	July	No	Req	41	$25
Milwaukee County General Hospital [1]	Wauwatosa	County	1,125	100			18,832	Rotating	38	12	June	No	Req	31	$10
CANAL ZONE															
Gorgas Hospital	Ancon	Fed	880	9	91		10,692	Rotating	11	12	June & July	No	Op	61	(y)
HAWAII															
Queen's Hospital	Honolulu	Corp	284			100	7,723	Rotating	6(z)	18	(1-d)	(132)	None	49	$71
PHILIPPINE ISLANDS															
Philippine General Hospital [1]	Manila	Fed	727	92		8	20,051	Rotating	31(zz)	12	March	(133)	Req	66	No

Numerical and other references will be found on pages 701 and 702.

HOSPITALS APPROVED FOR INTERNSHIPS IN THE DOMINION OF CANADA

For the benefit of graduates of approved medical colleges who desire an internship in Canada, the Council on Medical Education and Hospitals of the American Medical Association has declared that hospitals which conform to the standards of the Department of Hospital Service of the Canadian Medical Association should be regarded as giving an internship equivalent in educational value to that offered by hospitals in the United States approved for intern training by the Council. It is understood, however, that this statement applies only to hospitals that are unqualifiedly "Approved" under the Canadian plan and does not apply to that group referred to as "Recommended."

The following list of hospitals, revised to June 1, 1936, has been furnished by the Department of Hospital Service:

Name of Hospital	Location
Victoria General Hospital	Halifax, N. S.
St. John General Hospital	St. John, N. B.
Hospital du St. Sacrament	Quebec, Que.
Hotel Dieu de Quebec	Quebec, Que.
Children's Memorial Hosp.	Montreal, Que.
Hospital Notre Dame	Montreal, Que.
Hospital Ste. Justine	Montreal, Que.
Hotel Dieu St. Joseph	Montreal, Que.
Hospital Ste. Luc	Montreal, Que.
Jewish General Hospital	Montreal, Que.
Montreal General Hospital	Montreal, Que.
Royal Victoria Hospital	Montreal, Que.
Woman's General Hospital	Montreal, Que.
Ottawa Civic Hospital	Ottawa, Ont.
Ottawa General Hospital	Ottawa, Ont.
Kingston General Hospital	Kingston, Ont.
Hospital for Sick Children	Toronto, Ont.
St. Joseph's Hospital	Toronto, Ont.
St. Michael's Hospital	Toronto, Ont.
Toronto East General Hosp.	Toronto, Ont.
Toronto General Hospital	Toronto, Ont.
Toronto Western Hospital	Toronto, Ont.
Hamilton General Hospital	Hamilton, Ont.
St. Joseph's Hospital	Hamilton, Ont.
St. Joseph's Hospital	London, Ont.
Victoria General Hospital	London, Ont.
Metropolitan General Hosp.	Walkerville, Ont.
Hotel Dieu of St. Joseph Hosp.	Windsor, Ont.
Children's Hospital	Winnipeg, Man.
Winnipeg General Hospital	Winnipeg, Man.
St. Boniface Hospital	St. Boniface, Man.
Regina General Hospital	Regina, Sask.
St. Paul Hospital	Saskatoon, Sask.
Saskatoon City Hospital	Saskatoon, Sask.
Edmonton General Hospital	Edmonton, Alta.
Misericordia Hospital	Edmonton, Alta.
Royal Alexandra Hospital	Edmonton, Alta.
University of Alberta Hosp.	Edmonton, Alta.
St. Paul's Hospital	Vancouver, B. C.
Vancouver General Hospital	Vancouver, B. C.
Provincial Royal Jubilee Hosp.	Victoria, B. C.

NOTES

1. Women interns admitted.
2. Women interns only.
(a) In lieu of maintenance.
(b) Bonus of $110.
(c) Bonus of $10 for satisfactory records.
(d) Salary established by government pay tables.
(e) $20 per month for 11 months; $80 the twelfth month.
(f) Bonus of $250.
(g) Bonus of $25.
(h) Bonus of $180.
(i) Bonus of $100.
(j) Bonus of $120.
(k) Bonus of $60.
(m) Bonus of $50.
(n) Bonus of $20.
(o) Bonus of $300.
(p) Bonus of $150.
(q) Bonus of $190.
(r) Bonus of $40.
(s) Bonus of $125.
(t) $25 per month for 4 months; $50 for 8 months; bonus of $100.
(u) $20 per month to seniors after completion of 12 months' service.
(v) Bonus of $200.
(w) Bonus of $30.
(x) $15 per month first year; $20 per month second year; bonus of $75.
(xx) Bonus of $75.
(y) Not salary $50 per month. Appointments made by Chief of Office, The Panama Canal, Washington, D. C.
(z) Prefer aspirants going into foreign missions or boys born and raised in Hawaii.
(zz) All internships reserved for the fifth year students of the College of Medicine, University of the Philippines.
(1-a) January, April, May, July, August, November.
(1-b) June, July, September.
(1-c) January, March, July, November.
(1-d) Quarterly.
(1-e) Every two months.
(1-f) January, April, July.
(1-g) January, June, July, September.
(1-h) March, July, November.
(1-i) July, August, September.
(1-j) Surgery: March, July, November; medicine: January, April, June, September.
(1-k) February, June, October.
(1-m) January, April, May, July, September, October.
(1-n) Every six weeks.
(1-o) January, July, October.
(1-q) January, July, November.
(1-r) March, June, September, December.
(1-s) January, June, September.
(1-t) July, August, September, November, December.
(1-u) January, April, October.

Affiliation as Referred to in Column Headed: "Affiliated Service"

3. Patton State Hospital, Patton, psychiatry.
4. Children's Hospital and Los Angeles Maternity Service, pediatrics and obstetrics.
5. Fairmont Hospital, San Leandro, tuberculosis.
6. Woman's Hospital, Pasadena, obstetrics.
7. Laguna Honda Home Infirmary, San Francisco, chronic diseases; Hassler Health Home, Redwood City, tuberculosis.
8. St. Francis Hospital and University of California Hospital, San Francisco, obstetrics, pediatrics.
9. San Francisco Hospital, gynecology, obstetrics, pediatrics.
10. White Memorial Hospital, Los Angeles, obstetrics, pediatrics, surgery.
11. Santa Barbara General Hospital, communicable diseases and outpatient service.
12. St. Francis Hospital and Santa Barbara Cottage Hospital.
13. National Methodist Episcopal Sanatorium for Tuberculosis, Colorado Springs.
14. Columbia Hospital for Women and Lying-In Asylum, Washington.
15. Gallinger Municipal Hospital, Children's Hospital, Providence Hospital, Central Dispensary and Emergency Hospital, Columbia Hospital for Women and Lying-In Asylum, Washington, pediatrics, obstetrics, surgery.
16. Children's Hospital and Columbia Hospital for Women and Lying-In Asylum, Washington, pediatrics, obstetrics.
17. Grady Hospital, Atlanta.
18. Misericordia Hospital and Home for Infants, Chicago, obstetrics, gynecology, pediatrics.
19. Children's Memorial Hospital, Chicago, pediatrics.
20. Municipal Contagious Disease Hospital, Chicago.
21. Winfield Sanatorium, Winfield, tuberculosis. (28 rotating internships, 4 straight internships in pathology).
22. Winfield Sanatorium, Winfield, tuberculosis.
23. Grant Hospital, Chicago, obstetrics, gynecology, pediatrics.
24. Internships in the University of Chicago Clinics include service in Albert Merritt Billings Hospital, Bobs Roberts Memorial Hospital, Nancy Adele McElwee Memorial and Gertrude Dunn Hicks Memorial Hospital, Max Epstein Clinic; also Chicago Lying-In Hospital.
25. Peoria State Hospital, Peoria Municipal Tuberculosis Sanitarium.
26. The Indiana University Hospitals include the Robert W. Long Hospital, the James Whitcomb Riley Hospital for Children, the William H. Coleman Hospital for Women, the Indiana Rotary Convalescent Home, and the Kiwanis Home.
27. Paradise Valley Sanitarium and Hospital, National City, general.
28. Watkins Memorial Hospital, Lawrence.
29. Sedgwick County Hospital, Wichita, general and outpatient.
30. Salvation Army Home and Hospital and Sedgwick County Hospital, Wichita, obstetrics and general.
31. Julius Marks Sanatorium, Lexington, tuberculosis.
32. Children's Free Hospital, Louisville, pediatrics.
33. Louisville City Hospital, pediatrics, obstetrics.
34. Charity Hospital, New Orleans, pediatrics, gynecology, obstetrics.
35. Johns Hopkins Hospital, Baltimore, pathology.
36. Johns Hopkins Hospital, Baltimore, urology.
37. University Hospital and Sydenham Hospital, Baltimore, obstetrics, pediatrics, communicable diseases.
38. Sydenham Hospital, Baltimore, communicable diseases.
39. Boston City Hospital includes the Main Hospital, South Department for Contagious Diseases, Haymarket Square Relief Station, and East Boston Relief Station.
40. Boston State Hospital.
41. Evangeline Booth Maternity Hospital and Home, Boston.
42. Health Department Hospitals, Springfield, communicable diseases.
43. Shriners Hospital for Crippled Children, Health Department Hospitals, Wesson Maternity Hospital, Springfield, orthopedics, communicable diseases, obstetrics.
44. Herman Kiefer Hospital, Detroit.
45. Herman Kiefer Hospital, obstetrics, communicable diseases, tuberculosis; Children's Hospital, pediatrics.
46. Herman Kiefer Hospital, communicable diseases, tuberculosis; St. Joseph's Retreat, Dearborn, neurology.
47. Ingham Sanatorium and Boys' Vocational School Hospital, Lansing, tuberculosis and otolaryngology.
48. Miller Memorial Hospital, Duluth, outpatient service.
49. Gillette State Hospital for Crippled Children, St. Paul, orthopedics; Lutheran Girls' Maternity Home, Minneapolis, obstetrics; Glen Lake Sanatorium, Oak Terrace, tuberculosis.
50. Glen Lake Sanatorium, Oak Terrace, tuberculosis.
51. Children's Hospital, St. Paul, pediatrics.
52. Gillette State Hospital for Crippled Children, St. Paul, orthopedics.
53. Italian Settlement House, obstetrics.
54. St. Anthony's Hospital, St. Louis, obstetrics, gynecology, pediatrics.
55. St. Louis Children's Hospital, Shriners Hospital for Crippled Children, City Isolation Hospital, surgery, orthopedics, communicable diseases.
56. Jewish Sanatorium, Robertson, tuberculosis; City Isolation Hospital, St. Louis, communicable diseases.
57. Alexian Brothers Hospital, St. Louis, outpatient service.
58. City Isolation Hospital, communicable diseases; Robert Koch Hospital, tuberculosis; City Sanitarium, psychiatry.
59. St. Mary's Group of Hospitals includes St. Mary's Hospital, Firmin Desloge Hospital and Mt. St. Rose Sanatorium.
60. Municipal Hospital, Atlantic City, communicable diseases.
61. St. Elizabeth Hospital, Elizabeth, obstetrics.
62. "Bergen Pines" Bergen County Hospital, Ridgewood, tuberculosis and communicable diseases.
63. Margaret Hague Maternity Hospital, Jersey City; Hudson County Tuberculosis Hospital and Sanatorium, Secaucus.
64. Margaret Hague Maternity Hospital, Jersey City.
65. New Jersey State Hospital, Marlboro, psychiatry; Allenwood Sanatorium, Allenwood, tuberculosis.
66. Fairview Sanatorium, New Lisbon, tuberculosis.
68. Anthony N. Brady Maternity Hospital, Albany.
69. Kingston Avenue Hospital, Brooklyn, communicable diseases.
70. Children's Hospital, Buffalo, pediatrics.
71. Ulster County Tuberculosis Hospital, Kingston.
72. On Jan. 1, 1936, the merger of Flower and Fifth Avenue Hospitals became effective. Complete statistical data not available.
73. Jewish Maternity Hospital, New York City.
74. Flower-Fifth Avenue Hospital, New York City.
75. New York State Hospital, Ray Brook, tuberculosis.
76. Perth Amboy General Hospital, Perth Amboy, N. J., obstetrics, pediatrics.
77. Syracuse Memorial Hospital, City Hospital, Syracuse Psychopathic Hospital, obstetrics, communicable diseases, psychiatry.
78. Pawling Sanatorium, Wynantskill, tuberculosis.
79. Forsyth County Sanatorium, Winston-Salem, tuberculosis.
80. Children's Hospital, Akron.
81. Catherine Booth Home and Hospital, Cincinnati, obstetrics.
82. Children's Hospital, Cincinnati, pediatrics.
83. Christian R. Holmes Hospital, Hamilton County Tuberculosis Sanatorium, Hamilton County Home and Chronic Disease Hospital, Cincinnati.
84. Longview State Hospital, Cincinnati, psychiatry.
85. Cincinnati General Hospital, pediatrics, otolaryngology.
86. St. Ann's Maternity Hospital, Cleveland.
87. City Hospital, Cleveland, psychiatry.
88. University Hospitals of Cleveland include the Lakeside Hospital, Maternity Hospital, Babies and Childrens Hospital, Cleveland, and the Rainbow Hospital for Crippled and Convalescent Children, South Euclid.
89. Mt. Sinai Hospital, Cleveland, gynecology.
90. Children's Hospital, Columbus, pediatrics.
91. Starling-Loving University Hospital, Children's Hospital, Columbus, obstetrics, pediatrics.
92. Stillwater Sanatorium, Dayton, tuberculosis.
93. Shriners Hospital for Crippled Children, Salvation Army White Shield Home, Portland, orthopedics, obstetrics.
94. University of Oregon Medical School Hospitals include Multnomah Hospital and Doernbecher Memorial Hospital for Children.
95. Allentown State Hospital, psychiatry.
96. Hospital of the University of Pennsylvania, Philadelphia, obstetrics.
97. Philadelphia Hospital for Contagious Diseases.
98. Children's Hospital of the Mary J. Drexel Home, Philadelphia, pediatrics.
99. Henry Phipps Institute of the University of Pennsylvania, Philadelphia, outpatient service.
100. Children's Hospital, Philadelphia, pediatrics.
101. Shriners Hospital for Crippled Children and Philadelphia Hospital for Contagious Diseases.
102. Pennsylvania Hospital, Department for Mental and Nervous Diseases, Philadelphia.
103. Rosalia Foundling and Maternity Hospital and Municipal Hospital for Contagious Diseases, Pittsburgh.
104. Elizabeth Steel Magee Hospital, Children's Hospital, and Eye and Ear Hospital, Pittsburgh, obstetrics, gynecology, pediatrics, eye and ear.
105. Municipal Hospital for Contagious Diseases, Pittsburgh.
106. Berks County Tuberculosis Sanatorium, Reading.
107. Pittston Hospital, Pittston, obstetrics.
108. Providence Lying-In Hospital.
109. Children's Hospital and Pine Breeze Sanatorium, Chattanooga, pediatrics, tuberculosis.
110. Willard Parker Hospital, New York City, pediatrics.
111. Bradford Memorial Hospital for Babies, Dallas, pediatrics.
112. Spohn Hospital, Corpus Christi.
113. Gulf, Colorado and Santa Fe Hospital and the Scott and White Hospital, affiliated, furnish one internship.
114. Utah State Hospital, Provo, psychiatry.
115. Norfolk Protestant Hospital, Florence Crittenton Home, and Children's Clinic of the Kings Daughters, Norfolk, obstetrics, pediatrics.
116. Pine Camp Hospital, Brook Hill, tuberculosis.
117. Blue Ridge Sanatorium, Charlottesville, tuberculosis.
118. Includes service in King County Hospital, Unit No. 2, Seattle.
119. King County Hospital, Unit No. 1, Seattle, outpatient service.
120. Children's Orthopedic Hospital and Florence Crittenton Home, Seattle, orthopedics, pediatrics, obstetrics.
121. Children's Orthopedic Hospital, Seattle; Firland Sanatorium and Isolation Hospital, Richmond Highlands, pediatrics, orthopedics, tuberculosis, communicable diseases.
122. King County Hospital, Unit No. 1, Seattle, obstetrics, gynecology, pediatrics.
123. Rivercrest Hospital, Spokane, communicable diseases.
124. Edgecliff Sanatorium, Spokane, tuberculosis.
125. Edgecliff Sanatorium, Salvation Army Women's Hospital and Home, Florence Crittenton Home, Rivercrest Hospital, Spokane; Eastern State Hospital, Medical Lake, tuberculosis, obstetrics, communicable diseases, psychiatry.
126. Tacoma General Hospital.
127. Pierce County Hospital, Tacoma, surgery, medicine, obstetrics.
128. Hill Crest Sanatorium, Charleston, tuberculosis.
129. Milwaukee Children's Hospital, South View Hospital, Milwaukee, pediatrics, communicable diseases; Milwaukee Sanitarium, Wauwatosa, psychiatry.
130. Milwaukee Children's Hospital, pediatrics.
131. South View Hospital, Milwaukee, communicable diseases.
132. Kaulkeolani Children's Hospital, Honolulu, pediatrics.
133. Santol Tuberculosis Sanatorium, Santol; San Lazaro Hospital, Manila, and Insular Psychopathic Hospital, San Felipe Neri.

V 107
1936

HOSPITALS APPROVED FOR RESIDENCIES IN SPECIALTIES

Note.—The following hospitals are considered in position to furnish acceptable residencies in the several specialties designated, for graduates who have already had a general internship or its equivalent in practice. Statistical material is based on reports received for the calendar year 1935. Reported salaries and length of appointment should be verified through correspondence with individual hospitals.

The abbreviations under the column headed "Control" are as follows:

CyCo	City and county	Fed	Federal	NPAssn	Nonprofit association
Corp	Corporation unrestricted as to profit	Frat	Fraternal	Part	Partnership
		Indiv	Individual	USPHS	United States Public Health Service

HOSPITALS, 410; RESIDENCIES, 2,840

		Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Autopsies	Autopsy Percentage	Beginning Salary per Month
ANESTHESIA														
University of Chicago Clinics	Chicago	NPAssn	293	26	69	5	.....	....	2	Jan.	12	184	79	None
Methodist Episcopal Hospital	Indianapolis	Church	526	25	..	75	.....	....	2	Jan.	12	153	33	$50
Massachusetts General Hospital	Boston	NPAssn	424	47	34	19	.....	....	1	Varies	12	285	57	$41.67
Jersey City Hospital	Jersey City, N. J.	City	1,200	94	..	6	.....	....	3	March & Oct.	12	158	16	None
Bellevue Hospital	New York City	City	2,333	100	..	..	.....	....	12	Jan. & July	24	1,344	38	$50
Grasslands Hospital	Valhalla, N. Y.	County	932	87	13	..	.....	....	2	April & Oct.	12	295	64	$80
State University Hospital and Crippled Children's Hospital	Oklahoma City	State	510	62	32	6	.....	....	1	Jan.	12	208	53	$25
Hahnemann Hospital	Philadelphia	NPAssn	592	50	11	39	.....	....	2	Varies	12	223	28	$125
Philadelphia General Hospital	Philadelphia	City	2,400	100	..	..	.....	....	1	July	12	1,562	53	$100
Rhode Island Hospital	Providence, R. I.	NPAssn	600	60	15	25	.....	....	1	Varies	12	301	35	$45
State of Wisconsin General Hospital	Madison	State	652	88	7	5	.....	....	4	March	36	257	70	$25
CARDIOLOGY														
Indiana University Hospitals	Indianapolis	State	504	90	3	7	.....	Yes	1	Feb.	12	153	45	$33.33
Pennsylvania Hospital	Philadelphia	NPAssn	560	43	32	25	.....	Yes	1	Varies	12	191	50	$33.33
St. Francis Hospital	Pittsburgh	Church	587	29	13	58	592	Yes	1	Nov.	12	122	32	$50
Rhode Island Hospital	Providence, R. I.	NPAssn	600	60	15	25	.....	No	1	Varies	12	301	35	.....
COMMUNICABLE DISEASES														
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	4,301	....	4	Varies	Indef.	2,551	59	$175
Hospital for Children	San Francisco	NPAssn	259	14	23	63	205	....	1	Feb.	12	19	23	$75
Municipal Hospitals	Hartford, Conn.	City	328	100	..	..	548	....	1	Feb.	12	86	39	.....
Municipal Contagious Disease Hosp.	Chicago	City	428	100	..	..	5,036	....	8	Varies	12	132	73	$150
Boston City Hospital	Boston	City	1,732	90	9	1	1,631	....	2	Varies	Indef.	809	29	$83.33
Belmont Hospital	Worcester, Mass.	City	275	71	29	..	649	....	2	Varies	12	25	56	$133.33
Herman Kiefer Hospital	Detroit	City	1,400	98	2	..	4,521	....	6	Jan.	12	151	23	.....
City Isolation Hospital	St. Louis	City	250	95	3	2	1,901	....	1	April	12	55	28	$75
Essex County Hosp. for Contag. Dis.	Belleville, N. J.	County	550	96	4	..	3,664	....	2	Varies	Indef.	32	28	$300
Kingston Avenue Hospital	Brooklyn	City	510	100	..	..	6,199	....	8	May & Nov.	12	48	20	$100
Willard Parker Hospital	New York City	City	424	98	2	..	6,963	....	8	April & Oct.	12	83	44	$100
City Hospital	Cleveland	City	1,670	100	..	..	1,742	....	1	Jan.	12	628	38	$37
DERMATOLOGY-SYPHILOLOGY														
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	505	Yes	3	Varies	24	2,551	59	$10
Cook County Hospital [3]	Chicago	County	3,300	100	..	..	2,788	No	2	June & Dec.	12	1,176	21	None
University of Chicago Clinics	Chicago	NPAssn	293	26	69	5	.....	Yes	1	Jan.	12	184	72	None
Massachusetts General Hospital	Boston	NPAssn	424	47	34	19	267	Yes	1	Varies	12	285	57	$41.67
University Hospital	Ann Arbor, Mich.	State	1,285	79	..	21	1,769	Yes	2	Jan.	12	470	57	$25
Minneapolis General Hospital [4]	Minneapolis	City	687	95	5	..	268	Yes	1	Varies	36	331	39	None
Barnard Free Skin and Cancer Hosp.	St. Louis	NPAssn	44	100	..	..	802	Yes	1	Jan.	12	11	34	$25
Kings County Hospital	Brooklyn	City	3,160	100	..	..	684	Yes	1	June & Nov.	12	989	19	$100
Buffalo City Hospital [4]	Buffalo	CyCo	1,063	.....	..	..	173	Yes	2	Nov.	..	204	21	.....
Metropolitan Hospital [5]	New York City	City	1,425	100	..	..	127	Yes	1	Feb.	12	214	19	$75
Montefiore Hosp. for Chronic Diseases	New York City	NPAssn	711	79	8	13	.....	Yes	1	March & Oct.	12	365	73	$25
N. Y. Post-Grad. Med. School & Hosp.	New York City	NPAssn	411	13	3	84	158	Yes	1	Varies	12	81	26	.....
Cincinnati General Hospital	Cincinnati	City	925	80	13	7	432	Yes	1	Feb.	12	708	42	.....
City Hospital	Cleveland	City	1,670	100	..	..	598	Yes	2	Jan.	12	628	38	$37
University Hospitals	Cleveland	NPAssn	972	37	14	49	364	Yes	2	Jan.	12	348	54	$35
Skin and Cancer Hospital	Philadelphia	NPAssn	22	15	62	23	155	Yes	1	June	12	2	18	$30
University of Virginia Hospital	University	State	311	24	46	30	114	Yes	1	Dec.	12	113	84	$45
EPILEPSY														
Monson State Hospital	Palmer, Mass.	State	1,510	97	3	..	1,551	No	1	Varies	12	29	27	$150
Craig Colony	Sonyea, N. Y.	State	2,480	96	4	..	2,806	No	2	Varies	Indef.	47	36	.....
FRACTURES														
Cook County Hospital	Chicago	County	3,300	100	..	..	3,300	No	4	June & Dec.	12	1,176	21	None
Rhode Island Hospital	Providence	NPAssn	600	60	15	25	606	No	1	Varies	12	301	35	$45
GYNECOLOGY (Also see Obstetrics-Gynecology)														
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	1,611	Yes	3	Varies	18	2,551	59	$10
Passavant Memorial Hospital	Chicago	NPAssn	165	5	1	94	503	No	1	Jan. & July	12	45	60	None
Indiana University Hospitals	Indianapolis	State	504	90	3	7	811	Yes	1	Feb.	12	153	45	$33.33
Johns Hopkins Hospital	Baltimore	NPAssn	962	53	21	26	1,303	Yes	5	May	12	505	89	$50
University Hospital	Baltimore	State	450	50	6	44	560	Yes	2	Jan.	12	183	44	None
Free Hospital for Women	Brookline, Mass.	NPAssn	101	80	14	6	687	Yes	1	Jan.	12	8	36	$83.33
Jersey City Hospital	Jersey City, N. J.	City	1,200	94	..	6	1,205	Yes	1	March & Oct.	12	158	16	$50
Albany Hospital [6]	Albany, N. Y.	NPAssn	610	8	75	17	1,706	Yes	4	Dec.	12	353	72	$15
Buffalo City Hospital [3 4]	Buffalo	CyCo	1,063	.....	..	..	674	Yes	2	Nov.	..	204	21	.....
Buffalo General Hospital	Buffalo	NPAssn	465	13	36	51	1,184	Yes	1	Dec.	12	194	36	$25
Mount Sinai Hospital	New York City	NPAssn	780	57	16	27	.....	Yes	2	Varies	12	400	52	$45
N. Y. Post-Grad. Med. School & Hosp.	New York City	NPAssn	411	13	3	84	480	Yes	1	Varies	12	81	26	.....
Sloane Hospital for Women	New York City	NPAssn	332	33	42	25	1,116	Yes	1	Varies	12	7	33	$50
University Hospitals	Cleveland	NPAssn	972	37	14	49	1,309	Yes	3	Jan.	12	348	54	$35
Starling-Loving University Hospital	Columbus, O.	State	276	46	19	35	368	Yes	1	Dec.	12	137	41	$75

Numerical references will be found on page 715.

	Control	Capacity	Classification of Patients Percentage Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Autopsies	Autopsy Percentage	Beginning Salary per Month
GYNECOLOGY—Continued													
Graduate Hospital of the Univ. of Pa.	Philadelphia	NPAssn	475	36	9	55	718	Yes	1	Jan.	12	100	49	None
Hospital of the Univ. of Pennsylvania	Philadelphia	State	598	36	24	40	1,130	Yes	1	Jan.	12	216	67	None
Elizabeth Steel Magee Hospital	Pittsburgh	NPAssn	495	60	8	32	961	Yes	1	Jan.	12	81	39	$41.63
John Gaston Hospital	Memphis, Tenn.	City	400	98	..	2	886	Yes	1	July	12	221	19	$65
INDUSTRIAL SURGERY														
Indianapolis City Hospital	Indianapolis	City	577	92	4	4	.....	Yes	1	April	12	414	41	$20.83
MALIGNANT DISEASES														
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	1,085	Yes	2	Varies	12	2,551	59	$10
Albert Steiner Clinic for Cancer and Allied Diseases	Atlanta, Ga.	City	33	100	..	..	490	No	2	Jan.	12	14	100	$100
Michael Reese Hospital	Chicago	NPAssn	626	48	29	23	662	Yes	2	Jan. & July	27	279	51	None
Collis P. Huntington Memorial Hosp.	Boston	NPAssn	25	22	11	67	1,443	Yes	5	March	Indef.	8	73	$45
Pondville Hospital at Norfolk	Wrentham, Mass.	State	122	75	25	..	1,069	Yes	7	Varies	Indef.	131	62	.....
Barnard Free Skin and Cancer Hosp.	St. Louis	NPAssn	44	100	..	..	802	Yes	1	Jan.	12	11	34	$25
Jersey City Hospital	Jersey City, N. J.	City	1,200	94	..	6	344	Yes	1	March & Oct.	12	158	16	$50
Memorial Hospital for the Treatment of Cancer and Allied Diseases	New York City	NPAssn	110	5	50	45	2,500	Yes	10	Varies	36	64	52	$125
New York City Cancer Institute Hosp.	New York City	City	132	100	..	..	839	Yes	8	Varies	16	186	71	$30
Jeanes Hospital	Philadelphia	NPAssn	70	22	50	28	498	Yes	2	April	12	67	76	$50
MAXILLOFACIAL SURGERY														
Graduate Hosp. of the Univ. of Pa.[6]	Philadelphia	NPAssn	475	36	9	55	.....	Yes	1	Jan.	12	100	49	None
MEDICINE														
Hillman Hospital	Birmingham, Ala.	County	474	100	..	..	1,930	Yes	2	Jan.	12	241	26	$30
Employees' Hospital of the Tennessee Coal, Iron and Railroad Co.	Fairfield, Ala.	NPAssn	310	..	..	100	833	Yes	1	Jan.	12	108	45	$100
Fresno County General Hospital	Fresno, Calif.	County	520	98	2	..	1,423	Yes	1	Jan.	12	245	39	$65
Cedars of Lebanon Hospital	Los Angeles	NPAssn	288	22	3	75	1,262	No	1	Dec.	12	101	40	$75
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	8,560	Yes	6	Varies	36	2,551	59	$10
White Memorial Hospital	Los Angeles	Church	120	..	25	75	.....	Yes	1	April	36	46	32	$65
Alameda County Hospital[9]	Oakland, Calif.	County	372	100	..	..	4,079	No	3	Dec.	12	852	40	$40
San Bernardino County Charity Hosp.	San Bernardino, Calif.	County	324	100	..	..	626	Yes	1	April	12	132	42	$75
San Diego County General Hospital	San Diego, Calif.	County	663	100	..	..	3,263	Yes	2	April	12	276	42	$75
Hospital for Children	San Francisco	NPAssn	230	14	23	63	386	Yes	1	Feb.	12	19	24	$25
Mount Zion Hospital	San Francisco	NPAssn	189	18	13	69	1,193	Yes	1	Feb.	12	82	48	$50
San Francisco Hospital	San Francisco	CyCo	1,487	100	..	..	2,221	No	7	Nov.	12	555	53	$50
Stanford University Hospital	San Francisco	NPAssn	324	6	39	55	2,121	Yes	6	Jan.	12	118	53	$23.75
University of California Hospital	San Francisco	State	293	68	..	32	1,621	Yes	6	Feb.	12	146	73	$25
Santa Clara County Hospital[9]	San Jose, Calif.	County	493	98	2	..	.....	Yes	2	Jan.	12	210	39	.....
Colorado General Hospital	Denver	State	178	90	10	..	1,488	No	1	Jan.	12	175	81	.....
Denver General Hospital	Denver	CyCo	589	100	..	..	1,450	No	1	Varies	12	332	38	$50
New Haven Hospital	New Haven, Conn.	NPAssn	511	37	37	26	1,095	Yes	5	Jan. & July	12	232	57	.....
Central Disp. and Emergency Hospital	Washington, D. C.	NPAssn	270	18	14	68	2,459	Yes	2	March	12	170	49	$50
Freedmen's Hospital (col.)	Washington, D. C.	Fed	376	86	..	14	679	Yes	1	June	12	180	49	$51.66
Gallinger Municipal Hospital	Washington, D. C.	City	1,220	100	..	..	3,138	No	6	Jan.	12	497	34	$90
Grady Hospital	Atlanta, Ga.	City	325	100	..	..	1,891	Yes	1	Jan.	12	264	20	$50
Grady Hospital, Emory University Division (colored unit)	Atlanta, Ga.	City	275	100	..	..	1,463	Yes	3	Jan.	12	264	20	$50
University Hospital	Augusta, Ga.	City	300	52	5	43	1,815	Yes	3	Nov.	12	163	27	$50
Cook County Hospital	Chicago	County	3,300	100	..	..	17,240	No	4	June & Dec.	12	1,176	21	None
Passavant Memorial Hospital	Chicago	NPAssn	163	5	3	92	1,284	Yes	2	Jan. & July	12	45	60	None
Presbyterian Hospital	Chicago	Church	453	24	47	29	2,894	Yes	2	Varies	24	160	57	$50
Provident Hospital (col.)	Chicago	NPAssn	155	18	6	76	373	Yes	1	Jan.	12	59	39	$50
Research and Educational Hospital	Chicago	State	682	100	..	..	751	Yes	2	Varies	24	197	88	$50
St. Luke's Hospital	Chicago	NPAssn	659	4	20	76	1,236	Yes	4	Jan.	12	128	40	None
University of Chicago Clinics	Chicago	NPAssn	293	26	69	5	.....	Yes	6	Jan.	12	184	72	None
Wesley Memorial Hospital[1]	Chicago	Church	268	34	16	50	703	Yes	1	Jan.	12	67	68	.....
Evanston Hospital	Evanston, Ill.	NPAssn	270	15	38	47	1,254	Yes	1	April	12	95	66	$83.33
Indiana University Hospitals	Indianapolis	State	504	90	3	7	853	Yes	2	Feb.	12	153	45	$33.33
University Hospitals	Iowa City	State	954	87	8	5	.....	Yes	6	July	12	325	57	$20.83
University of Kansas Hospitals	Kansas City, Kan.	State	250	15	37	48	883	Yes	1	Oct.	36	216	84	$91
Louisville City Hospital	Louisville, Ky.	City	423	90	10	..	2,325	Yes	9	March	36	288	29	$13.91
Charity Hospital	New Orleans	State	1,913	100	..	..	15,288	Yes	5	May & June	12	1,347	40	$25
Touro Infirmary	New Orleans	NPAssn	366	31	38	31	914	Yes	1	Jan. to March	12	142	46	$25
Baltimore City Hospitals (General)	Baltimore	City	963	100	..	..	1,930	No	6	Jan.	12	440	41	$12.50
Church Home and Infirmary	Baltimore	Church	184	21	53	26	383	Yes	1	Dec.	12	44	46	$25
Johns Hopkins Hospital	Baltimore	NPAssn	902	31	21	26	2,492	Yes	9	May	12	505	80	$50
Maryland General Hospital	Baltimore	Church	238	42	9	49	624	No	1	Jan.	12	44	18	$25
Mercy Hospital	Baltimore	Church	300	53	11	36	633	No	2	Jan.	12	86	38	$50
Provident Hosp. and Free Disp. (col.)	Baltimore	NPAssn	132	83	4	13	398	No	1	Oct.	12	36	17	$25
St. Agnes' Hospital	Baltimore	Church	205	38	34	28	724	Yes	1	Nov.	12	53	26	.....
St. Joseph's Hospital	Baltimore	Church	285	41	12	47	585	Yes	2	Jan.	12	70	30	.....
Sinai Hospital	Baltimore	NPAssn	269	41	8	51	984	Yes	1	Jan.	12	58	27	$47.50
South Baltimore General Hospital	Baltimore	NPAssn	125	31	42	27	274	Yes	1	Dec.	12	46	34	$35
Union Memorial Hospital	Baltimore	NPAssn	275	22	48	30	1,197	Yes	3	Jan.	12	77	37	$12.50
University Hospital	Baltimore	State	450	60	6	44	1,083	Yes	2	Jan.	12	183	44	None
West Baltimore General Hospital	Baltimore	Corp	200	35	..	65	367	Yes	1	Jan.	12	22	21	$30
Beth Israel Hospital	Boston	NPAssn	215	18	32	50	1,253	No	2	Varies	12	102	51	.....
Boston City Hospital	Boston	City	1,732	90	9	1	6,164	Yes	8	Sept.	12	809	29	$41.67
Massachusetts General Hospital	Boston	NPAssn	424	47	34	19	1,991	Yes	6	Varies	12	285	51	$41.67
Massachusetts Memorial Hospitals	Boston	NPAssn	346	23	45	32	867	Yes	1	March	12	64	39	$91
Peter Bent Brigham Hospital	Boston	NPAssn	247	44	29	27	1,935	Yes	5	Varies	24	171	61	$41.67
University Hospital	Ann Arbor, Mich.	State	1,285	79	..	21	3,694	Yes	8	Jan.	12	470	57	$25
City of Detroit Receiving Hospital	Detroit	City	650	100	..	..	4,871	Yes	4	Dec.	12	577	28	$83.33
Grace Hospital	Detroit	NPAssn	508	31	42	27	2,296	Yes	1	Feb.	12	130	18	$40
Harper Hospital	Detroit	NPAssn	725	10	..	90	2,343	Yes	7	Jan.	12	108	22	$25
Henry Ford Hospital	Detroit	NPAssn	608	34	..	66	.....	Yes	9	Jan.	12	226	41	$110
Jefferson Clinic Hospital	Detroit	NPAssn	60	5	15	80	.....	Yes	1	Feb.	24	8	19	$50
Providence Hospital	Detroit	Church	466	21	67	12	2,089	No	1	Jan.	12	144	32	$100
Eloise Hospital (Dr. William J. Seymour Hospital)	Eloise, Mich.	County	1,368	100	..	..	.....	Yes	2	March	12	551	44	$50
Hurley Hospital	Flint, Mich.	City	487	..	..	..	.....	Yes	1	July	12	275	45	$100
Minneapolis General Hospital[1]	Minneapolis	City	687	95	5	..	2,354	Yes	6	Varies	12	331	39	$25
Ancker Hospital	St. Paul	CyCo	900	100	..	..	.....	Yes	6	March	12	516	65	$50
Barnes Hospital	St. Louis	Church	300	16	4	80	2,625	No	3	Dec.	12	170	57	$25
Jewish Hospital	St. Louis	NPAssn	290	29	52	19	1,477	No	2	Dec.	12	56	31	$40
St. Louis City Hospital	St. Louis	City	806	100	..	..	4,042	Yes	6	March	12	764	43	$75

Numerical references will be found on page 715.

V 107
1936

	Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Autopsies	Autopsy Percentage	Beginning Salary per Month
MEDICINE—(Continued)													
St. Louis City Hospital No. 2 (col.)	City	325	100	..	..	3,653	Yes	1	June	12	122	16	$100
St. Luke's Hospital	St. Louis	210	14	31	55	728	Yes	1	Dec.	12	42	25	$50
St. Mary's Group of Hospitals	St. Louis	551	36	31	33	1,974	Yes	6	March	36	164	44	$25
Jersey City Hospital	Jersey City, N. J.	1,200	94	..	6	3,723	Yes	2	March & Oct.	12	158	16	$50
Albany Hospital [5]	Albany, N. Y.	610	8	75	17	1,414	Yes	4	Dec.	12	333	72	$15
Cumberland Hospital	Brooklyn	318	100	..	..	1,461	No	1	March	12	155	40	$100
Kings County Hospital	Brooklyn	3,160	100	..	..	12,948	Yes	5	June & Nov.	12	959	19	None
Long Island College Hospital	Brooklyn	NPAssn	473	18	34	48	1,349	Yes	2	Jan.	12	126	34	$22.50
Norwegian Lutheran Deaconesses' Home and Hospital	Brooklyn	Church	198	5	43	52	579	Yes	1	March	12	105	50	.....
Buffalo City Hospital [4]	Buffalo	CyCo	1,063	..	..	..	3,471	Yes	2	Nov.	..	294	21	.....
Buffalo General Hospital	Buffalo	NPAssn	465	13	36	51	2,428	Yes	7	Dec.	12	194	36	$25
Millard Fillmore Hospital	Buffalo	NPAssn	309	21	34	45	.....	Yes	2	Dec.	12	119	46	$50
Clifton Springs Sanitarium and Clinic	Clifton Springs, N. Y.	NPAssn	482	10	40	50	1,713	No	1	Varies	12	35	56	$25
Charles S. Wilson Memorial Hospital	Johnson City, N. Y.	NPAssn	350	1	3	96	1,015	Yes	1	Dec.	12	85	51	$75
Metropolitan Life Insurance Co. Sanat.	Mt. McGregor, N. Y.	NPAssn	360	100	..	..	366	.....	1	Varies	Indef.	6	75	$100
Bellevue Hospital	New York City	City	2,333	100	..	..	11,858	Yes	4	Jan. & July	12	1,344	38	$83.33
Flower-Fifth Avenue Hospital [7]	New York City	NPAssn	347	.....	..	..	.....	.....	..	.....	..	.....	..	.....
Metropolitan Hospital	New York City	City	1,425	100	..	..	2,682	Yes	2	Feb.	12	214	19	$100
Montefiore Hosp. for Chronic Diseases	New York City	NPAssn	711	79	8	13	786	Yes	4	March & Oct.	12	365	73	$25
Mount Sinai Hospital	New York City	NPAssn	780	57	16	27	.....	Yes	2	Varies	12	400	52	$120
New York Hospital	New York City	NPAssn	1,010	8	73	19	909	Yes	8	Jan.	12	316	57	$25
N. Y. Post-Grad. Med. School & Hosp.	New York City	NPAssn	411	13	3	84	1,187	Yes	1	Varies	12	81	26	.....
Presbyterian Hospital	New York City	NPAssn	965	33	42	25	3,599	Yes	3	Varies	12	231	45	$41.67
Genesee Hospital	Rochester, N. Y.	NPAssn	220	29	28	43	915	No	1	Jan.	12	74	29	$50
Rochester General Hospital	Rochester, N. Y.	NPAssn	365	24	9	67	1,507	No	1	April	12	209	65	$50
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	NP-Cy	645	49	29	12	3,309	Yes	5	Jan.	12	382	66	$41.67
Hospital of the Good Shepherd	Syracuse, N. Y.	NPAssn	242	2	45	53	.....	No	2	Dec.	12	96	40	$29.50
Grasslands Hospital	Valhalla, N. Y.	County	962	87	13	..	1,455	Yes	1	April & Oct.	12	295	64	$120
Duke Hospital	Durham, N. C.	NPAssn	456	66	24	10	3,179	Yes	6	Jan.	36	195	57	$41.67
Watts Hospital	Durham, N. C.	NPAssn	225	32	33	35	1,400	Yes	1	Jan.	12	62	28	$50
City Memorial Hospital	Winston-Salem, N. C.	City	191	43	48	9	534	Yes	1	Jan.	12	44	23	$50
City Hospital [8]	Akron, O.	NPAssn	350	43	7	50	3,503	Yes	1	Feb.	12	191	52	$50
Cincinnati General Hospital	Cincinnati	City	925	80	13	7	2,221	Yes	10	Feb.	12	708	42	.....
Deaconess Hospital	Cincinnati	Church	175	5	40	55	672	Yes	1	Dec.	12	58	25	.....
Good Samaritan Hospital	Cincinnati	Church	535	20	52	28	2,641	Yes	1	Jan.	12	81	16	$50
Jewish Hospital [9]	Cincinnati	NPAssn	262	19	43	38	2,963	Yes	2	July	12	61	31	$50
City Hospital	Cleveland	City	1,670	100	..	..	2,465	Yes	5	Jan.	12	628	38	$37
Mount Sinai Hospital	Cleveland	NPAssn	270	34	12	54	1,309	No	1	Dec.	12	57	26	$60
St. Alexis Hospital	Cleveland	Church	220	35	4	61	1,088	No	1	Dec.	12	84	38	$50
St. John's Hospital	Cleveland	Church	210	12	10	78	865	No	1	Dec.	12	78	32	$25
St. Luke's Hospital	Cleveland	Church	382	23	2	75	1,410	Yes	2	Dec.	24	92	24	$25
University Hospitals	Cleveland	NPAssn	972	37	14	49	2,167	Yes	12	Jan.	12	348	54	$35
Starling-Loving University Hospital	Columbus, O.	State	276	46	19	35	783	Yes	4	Dec.	12	137	41	$25
Miami Valley Hospital	Dayton, O.	NPAssn	371	33	26	41	1,657	No	1	Jan.	12	217	47	$75
St. Elizabeth's Hospital	Youngstown, O.	Church	261	2	20	78	1,016	No	1	Dec.	12	85	24	$50
State University Hospital and Crippled Children's Hospital [9]	Oklahoma City	State	510	62	32	6	1,005	Yes	2	Jan.	12	208	53	$25
Univ. of Oregon Med. School Hosps.	Portland	Co-St	405	93	..	7	1,585	Yes	2	Jan.	24	400	65	$30
Abington Memorial Hospital	Abington, Pa.	NPAssn	275	30	22	48	1,052	Yes	1	March	12	106	48	None
Geo. F. Geisinger Memorial Hospital	Danville, Pa.	NPAssn	198	25	31	44	1,180	No	1	Jan.	12	58	30	$50
Germantown Dispensary and Hospital	Philadelphia	NPAssn	360	18	32	50	676	Yes	1	Jan.	12	84	46	$130
Graduate Hospital of the Univ. of Pa.	Philadelphia	NPAssn	475	36	9	55	975	Yes	1	Jan.	12	100	49	None
Hospital of the Univ. of Pennsylvania	Philadelphia	State	568	36	24	40	1,631	Yes	1	Jan.	12	216	67	None
Jewish Hospital	Philadelphia	NPAssn	426	34	12	54	956	No	1	March	12	174	52	None
Pennsylvania Hospital	Philadelphia	NPAssn	560	43	32	25	1,469	Yes	2	Varies	12	191	50	$41.67
Philadelphia General Hospital	Philadelphia	City	2,400	100	..	..	5,214	Yes	1	July	12	1,962	53	$100
Allegheny General Hospital	Pittsburgh	NPAssn	405	59	..	38	1,082	No	1	Feb.	12	100	28	$81
Mercy Hospital [1]	Pittsburgh	Church	670	35	35	30	1,510	Yes	1	Dec.	12	144	32	.....
St. Francis Hospital	Pittsburgh	Church	587	29	13	58	953	Yes	1	Nov.	12	122	32	$75
Reading Hospital	Reading, Pa.	NPAssn	268	44	2	54	5,370	Yes	1	Jan.	12	154	61	$83.33
Roper Hospital	Charleston, S. C.	NPAssn	360	63	4	33	1,941	Yes	1	Jan.	12	152	28	$48
John Gaston Hospital	Memphis, Tenn.	City	400	98	..	2	2,054	Yes	2	July	12	221	19	$65
Nashville General Hospital [9]	Nashville, Tenn.	City	305	84	..	16	.....	Yes	2	Dec.	12	157	35	$75
Vanderbilt University Hospital	Nashville, Tenn.	NPAssn	210	34	34	32	1,154	No	4	March	12	189	61	$35.40
Baylor University Hospital	Dallas, Tex.	Church	380	20	20	60	1,814	Yes	1	April	12	95	30	$75
John Sealy Hospital	Galveston, Tex.	City	494	70	5	25	.....	Yes	1	Jan.	12	209	57	None
Norfolk General Hospital	Norfolk, Va.	Church	200	24	26	50	1,216	Yes	1	Jan.	12	26	18	$37.50
Medical College of Va., Hosp. Division	Richmond	NPAssn	442	7	81	12	1,499	Yes	4	Feb.	12	241	33	$25
University of Virginia Hospital	University	State	311	24	46	30	1,472	Yes	2	Dec.	12	113	34	None
State of Wisconsin General Hospital	Madison	State	652	88	7	5	.....	Yes	2	March	36	257	70	$25
St. Joseph's Hospital	Milwaukee	Church	395	19	34	47	1,378	Yes	1	Dec.	12	54	24	$100
MENTAL DEFICIENCIES													
Belchertown State School	Belchertown, Mass.	State	1,250	100	..	..	.....	No	1	Varies	Indef.	8	23	.....
Michigan Home and Training School	Lapeer, Mich.	State	177	100	..	..	1,469	Yes	2	Varies	12	21	32	$150
Polk State School	Polk, Pa.	State	3,000	92	6	2	.....	Yes	2	July	Indef.	14	22	$75
METABOLIC DISEASES													
Philadelphia General Hospital	Philadelphia	City	2,400	100	..	..	640	Yes	1	July	12	1,962	53	$100
MIXED													
Golden State Hospital	Los Angeles	Indiv	69	...	..	100	622	Yes	3	Varies	Indef.	13	87	.....
St. Luke's Hospital	San Francisco	Church	225	8	9	83	4,864	Yes	7	Jan.	12	49	25	$50
Fairmont Hosp. of Alameda County	San Leandro, Calif.	County	900	100	..	..	2,531	No	2	Dec.	12	202	45	.....
James M. Jackson Memorial Hosp.	Miami, Fla.	City	350	55	..	45	9,829	Yes	2	Jan.	12	118	17	$75
Emory University Hospital	Emory University, Ga.	NPAssn	180	3	13	84	3,790	No	1	Jan.	12	36	36	.....
West Suburban Hospital	Oak Park, Ill.	NPAssn	182	8	23	69	3,466	Yes	1	March	12	29	23	$100
Indianapolis City Hospital	Indianapolis	City	577	92	4	4	.....	Yes	4	April	12	414	41	$30.83
Massachusetts Memorial Hospitals	Boston	NPAssn	346	23	45	33	.....	Yes	1	March	12	64	39	$91
Atlantic City Hospital	Atlantic City, N. J.	NPAssn	276	43	28	29	6,246	Yes	2	Jan.	12	122	26	$75
Arnot-Ogden Memorial Hospital	Elmira, N. Y.	NPAssn	213	9	55	36	4,369	Yes	1	Jan.	12	65	53	.....
Jamaica Hospital	Jamaica, N. Y.	NPAssn	177	38	3	59	5,306	Yes	1	Varies	12	87	36	$100
St. Thomas Hospital	Akron, O.	Church	185	31	33	36	4,991	No	1	Dec.	12	79	36	$35
Charity Hospital	Cleveland	Church	301	42	3	55	5,409	Yes	3	Jan.	12	131	34	.....
Women's and Children's Hospital	Toledo, O.	NPAssn	146	4	69	27	2,360	No	2	Jan.	12	49	37	$25

Numerical references will be found on page 715.

		Control	Capacity	Classification of Patients Percentage Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Hours Autopsy Percentage		Beginning Salary per Month
MIXED—Continued														
Youngstown Hospital	Youngstown, O.	NPAssn	448	2	71	27	7,822	No	2	Jan.	12	158	33	$100
St. Anthony Hospital	Oklahoma City	Church	340	11	54	35	2,521	Yes	1	Jan.	12	108	33	.....
Presbyterian Hospital	Philadelphia	Church	425	30	12	58	5,069	Yes	1	Varies	12	95	38	$100
Baroness Erlanger Hospital	Chattanooga, Tenn.	CyCo	246	67	1	32	6,753	Yes	2	Dec.	12	116	26	$50
Knoxville General Hospital	Knoxville, Tenn.	City	300	68	..	32	7,789	Yes	1	Jan.	12	108	23	.....
Medical Arts Hospital	Dallas, Tex.	Indiv	56	...	..	100	2,406	Yes	1	March	12	3	17	$75
Salt Lake General Hospital	Salt Lake City	County	246	91	8	9	3,617	Yes	1	March	12	73	20	$50
Chesapeake and Ohio Railway Hosp.	Clifton Forge, Va.	NPAssn	150	...	50	50	2,731	Yes	3	Feb.	12	13	16	$50
Jefferson Hospital	Roanoke, Va.	Corp	110	...	..	..	2,146	Yes	2	Dec.	12	16	16	.....
NEUROLOGY														
Los Angeles County Hospital [10]	Los Angeles	County	3,410	100	..	..	1,404	Yes	2	Varies	24	2,551	59	$10
University of Chicago Clinics [10]	Chicago	NPAssn	293	26	69	5	.....	Yes	2	Jan.	12	184	72	None
University Hospitals	Iowa City	State	954	87	8	5	181	Yes	2	July	12	325	57	$20.83
Boston City Hospital	Boston	City	1,732	90	9	1	523	Yes	2	Sept.	12	809	29	None
Massachusetts General Hospital	Boston	NPAssn	424	47	34	19	375	Yes	1	Varies	12	285	57	$41.67
University Hospital	Ann Arbor, Mich.	State	1,285	79	..	21	969	Yes	1	Jan.	12	470	57	$25
Kings County Hospital	Brooklyn	City	3,160	100	..	..	4,510	Yes	1	June & Nov.	12	939	19	$100
Bellevue Hospital	New York City	City	2,333	100	..	..	289	Yes	5	Jan. & July	12	1,344	38	$83.33
Central Neurological Hospital	New York City	City	470	100	..	..	1,224	No	6	Jan. & July	12	97	34	$100
Lenox Hill Hospital	New York City	NPAssn	595	55	..	45	132	Yes	1	Varies	12	127	38	$25
Metropolitan Hospital	New York City	City	1,425	100	..	..	181	Yes	1	Feb.	12	214	19	$75
Montefiore Hosp. for Chronic Diseases	New York City	NP Assn	711	79	8	13	314	Yes	5	March & Oct.	12	365	73	$25
Mount Sinai Hospital	New York City	NPAssn	780	57	16	27	.....	Yes	3	Varies	12	400	52	None
Neurological Institute of New York	New York City	NPAssn	222	13	22	65	3,617	No	15	Varies	24	76	47	$40
Philadelphia Orthopaedic Hosp. and Infirmary for Nervous Diseases	Philadelphia	NPAssn	140	37	37	26	295	Yes	1	Varies	12	1	25	$40
State of Wisconsin General Hospital	Madison	State	652	88	7	5	.....	Yes	1	March	36	257	70	$25
NEUROPSYCHIATRY														
Compton Sanitarium	Compton, Calif.	Corp	155	...	..	100	400	No	1	Varies	12	2	18	$100
Stanford University Hospitals	San Francisco	NPAssn	324	6	39	55	504	Yes	3	Jan.	12	118	53	$23.75
Mendocino State Hospital	Talmage, Calif.	State	2,212	91	1	8	2,744	No	2	Varies	12	33	24	$50
Colorado Psychopathic Hospital	Denver	State	78	69	23	8	806	Yes	6	Jan.	36	23	77	$100
Neuro-Psychiatric Institute of the Hartford Retreat	Hartford, Conn.	NPAssn	250	...	..	..	852	No	3	Varies	Indef.	25	19	.....
Connecticut State Hospital	Middletown	State	3,171	100	..	..	4,094	No	3	Varies	Indef.	52	20	.....
New Haven Hospital	New Haven, Conn.	NPAssn	511	37	37	26	411	Yes	3	Jan. & July	12	252	57	.....
Delaware State Hospital	Farmhurst, Del.	State	1,050	84	6	10	1,549	Yes	4	Jan. & June	12	32	33	$50
Gallinger Municipal Hospital	Washington, D. C.	City	1,220	100	..	..	2,850	No	2	Jan.	12	497	34	$30
St. Elizabeths Hospital	Washington, D. C.	Fed	5,445	100	..	..	.....	....	10	July & Oct.	12	198	66	$166.67
Cook County Hospital	Chicago	County	3,300	100	..	..	5,591	No	3	June & Dec.	12	1,176	21	None
Research and Educational Hospital	Chicago	State	382	100	..	..	143	Yes	3	Varies	Indef.	197	88	$50
University of Chicago Clinics	Chicago	NPAssn	293	26	69	5	.....	Yes	1	Jan.	12	184	72	None
East Moline State Hospital	East Moline, Ill.	State	1,980	100	..	..	2,580	No	2	Varies	Indef.	67	40	$50
Elgin State Hospital	Elgin, Ill.	State	4,450	100	..	..	6,364	No	2	Varies	Indef.	140	31	$50
Central State Hospital	Indianapolis	State	1,800	90	10	..	1,848	No	3	Varies	Indef.	55	42	.....
Indianapolis City Hospital	Indianapolis	City	577	92	4	4	432	Yes	1	April	12	414	41	$20.83
Logansport State Hospital	Logansport, Ind.	State	1,688	97	1	2	1,881	No	2	Varies	36	25	18	$100
Iowa State Psychopathic Hospital	Iowa City	State	60	76	2	22	391	Yes	4	May & Dec.	12	3	60	$141.67
Osawatomie State Hospital	Osawatomie, Kan.	State	1,580	94	..	6	1,904	No	1	June	Indef.	16	17	$150
Menninger Sanitarium	Topeka, Kan.	Corp	50	100	..	..	157	Yes	3	Varies	12	*	..	$75
Baltimore City Hosps. (Psychopathic)	Baltimore	City	300	100	..	..	533	No	1	Varies	Indef.	10	53	$300
Johns Hopkins Hospital	Baltimore	NPAssn	902	53	21	26	279	Yes	4	May	12	505	80	$50
Spring Grove State Hospital	Catonsville, Md.	State	1,786	100	..	..	2,299	Yes	1	Varies	Indef.	22	18	$135
Springfield State Hospital	Sykesville, Md.	State	2,000	100	..	..	3,260	....	3	May	12	41	25	$25
Sheppard and Enoch Pratt Hospital	Towson, Md.	NPAssn	300	10	60	30	680	No	6	Varies	Indef.	1	15	$100
McLean Hospital	Belmont, Mass.	NPAssn	232	7	41	52	440	Yes	5	June	12	2	18	$50
Boston Psychopathic Hospital	Boston	State	110	85	5	10	2,010	No	8	April	12	21	58	$75
Boston State Hospital	Boston	State	2,466	88	..	12	3,159	No	3	Varies	Indef.	220	61	$150
Massachusetts General Hospital	Boston	NPAssn	424	47	34	19	118	Yes	1	Varies	12	285	57	$41.67
Gardner State Hospital	Gardner, Mass.	State	1,339	97	2	1	1,669	Yes	2	Varies	12	17	40	$45
Danvers State Hospital	Hathorne, Mass.	State	2,300	70	26	4	3,147	Yes	2	July	Indef.	47	16	None
Medfield State Hospital	Medfield, Mass.	State	1,835	97	..	3	2,340	Yes	2	Varies	12	50	36	$150
Grafton State Hospital	North Grafton, Mass.	State	1,500	98	2	..	1,541	No	1	Varies	Indef.	17	27	$150
Taunton State Hospital	Taunton, Mass.	State	1,560	87	8	5	2,231	Yes	4	July	12	101	50	$150
Worcester State Hospital	Worcester, Mass.	State	2,256	85	10	5	2,223	No	6	March	12	165	61	None
State Psychopathic Hospital	Ann Arbor, Mich.	State	64	88	9	3	198	Yes	1	April	12	3	100	$150
Eloise Hospital (Psychotic Unit)	Eloise, Mich.	County	3,300	100	..	..	3,803	Yes	5	March	12	533	44	$150
Kalamazoo State Hospital	Kalamazoo, Mich.	State	2,765	...	..	..	3,014	Yes	3	June	12	46	28	$80
Pontiac State Hospital	Pontiac, Mich.	State	1,800	100	..	..	1,773	No	6	Varies	Indef.	30	31	$141.67
Traverse City State Hospital	Traverse City, Mich.	State	2,300	100	..	..	2,295	No	3	Varies	Indef.	24	19	$150
Ypsilanti State Hospital	Ypsilanti, Mich.	State	1,560	86	2	12	2,265	Yes	2	Varies	Indef.	36	43	.....
Minneapolis General Hospital [1]	Minneapolis	City	687	95	5	..	994	Yes	1	Varies	12	331	39	$25
State Hospital No. 4	Farmington, Mo.	State	1,272	...	..	..	1,624	Yes	3	Varies	12	22	18	$100
State Hospital No. 1	Fulton, Mo.	State	2,012	97	..	3	2,363	No	3	Varies	Indef.	24	19	.....
State Hospital No. 2	St. Joseph, Mo.	State	2,535	98	..	2	2,513	Yes	1	Varies	Indef.	86	36	.....
City Sanitarium	St. Louis	City	3,654	84	10	6	4,040	Yes	5	April	12	68	29	$150
St. Louis City Hospital	St. Louis	City	806	100	..	..	3,084	Yes	2	March	12	764	43	.....
Hastings State Hospital	Ingleside, Neb.	State	1,406	92	2	6	1,869	No	2	May	12	39	47	$100
Norfolk State Hospital	Norfolk, Neb.	State	1,001	89	11	..	1,055	No	2	Varies	Indef.	41	63	$80
Lutheran Hospital [1]	Omaha	Church	108	...	..	..	469	Yes	1	Jan.	12	18	23	$80
New Jersey State Hospital	Greystone Park	State	5,158	24	70	6	6,538	Yes	3	Varies	Indef.	143	23	$160
Albany Hospital [5]	Albany, N. Y.	NPAssn	610	8	75	17	653	Yes	3	Dec.	12	333	72	$15
Binghamton State Hospital	Binghamton, N. Y.	State	2,391	94	..	6	3,561	Yes	3	Varies	Indef.	124	55	$150
Brooklyn State Hospital	Brooklyn	State	1,703	100	..	..	4,214	Yes	11	Varies	Indef.	145	27	$150
Buffalo City Hospital [4]	Buffalo	CyCo	1,063	...	..	..	980	Yes	2	Nov.	..	204	21	.....
Buffalo State Hospital	Buffalo	State	2,597	88	12	..	3,402	Yes	2	Varies	Indef.	41	21	$150
Hastings Hillside Hospital	Hastings-on-Hudson, N. Y.	NPAssn	41	81	85	4	148	Yes	1	July	12	*	..	$100
Gowanda State Homeopathic Hosp.	Helmuth, N. Y.	State	1,340	88	10	2	2,007	No	2	Varies	Indef.	63	55	.....
Middletown State Homeopathic Hosp.	Middletown, N. Y.	State	2,780	85	15	..	3,557	No	1	Varies	Indef.	92	53	.....
New York Hospital	New York City	NPAssn	1,010	8	73	19	295	Yes	10	Jan.	12	316	57	.....
N. Y. State Psychiatric Inst. and Hosp.	New York City	State	200	85	15	..	551	Yes	6	Jan. & July	12	2	100	$25
U. S. Marine Hospital	New York City	USPHS	540	100	..	..	668	No	1	April	12	69	79	$100
St. Lawrence State Hospital	Ogdensburg, N. Y.	State	2,224	91	4	5	2,649	Yes	3	Varies	12	72	41	$150
Hudson River State Hospital	Poughkeepsie, N. Y.	State	4,438	90	5	5	5,301	No	3	Varies	12	109	33	$150
Rochester State Hospital	Rochester, N. Y.	State	3,224	89	11	..	3,616	Yes	6	Varies	12	37	20	$150

Numerical references will be found on page 715.

V 107
1936

		Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Autopsies	Autopsy Percentage	Beginning Salary per Month
NEUROPSYCHIATRY—Continued														
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	NP-Cy	645	49	39	12	436	Yes	•1	Jan.	12	382	66	$66.67
Utica State Hospital	Utica, N. Y.	State	1,640	100	..	..	2,319	Yes	1	Varies	Indef.	50	100	.....
Grasslands Hospital	Valhalla, N. Y.	County	932	87	13	..	1,183	Yes	2	April & Oct.	24	295	64	$120
Bloomingdale Hospital	White Plains, N. Y.	NPAssn	330	3	40	57	552	Yes	6	Varies	24	1	25	$125
Duke Hospital	Durham, N. C.	NPAssn	456	66	24	10	.....	Yes	1	Jan.	12	195	57	$41.67
North Dakota State Hosp. for Insane	Jamestown, N. D.	State	2,000	100	..	..	2,143	No	2	July	12	23	21	$75
Cincinnati General Hospital	Cincinnati	City	925	80	13	7	1,322	Yes	3	Feb.	12	708	42	.....
Longview State Hospital	Cincinnati	State	1,742	100	..	..	2,622	Yes	2	April	12	120	53	None
City Hospital	Cleveland	City	1,670	100	..	..	764	Yes	3	Jan.	12	628	38	$37
Cleveland State Hospital	Cleveland	State	2,700	100	..	..	3,304	..	2	Varies	Indef.	22	33	$75
Columbus State Hospital	Columbus, O.	State	2,400	100	..	..	3,610	No	1	Varies	Indef.	60	20	.....
Toledo State Hospital	Toledo, O.	State	2,600	66	34	..	3,630	No	1	May	Indef.	35	16	$50
Allentown State Hospital	Allentown, Pa.	State	1,544	83	5	12	.....	Yes	2	Varies	Indef.	30	28	$25
Danville State Hospital	Danville, Pa.	State	1,947	88	4	8	2,951	Yes	2	Varies	Indef.	26	17	$100
Friends Hospital	Philadelphia	NPAssn	190	..	..	..	231	No	1	Varies	12	*	..	$100
Pennsylvania Hosp. Department for Mental and Nervous Diseases	Philadelphia	NPAssn	225	4	61	35	407	Yes	5	Dec.	Indef.	*	..	None
Philadelphia General Hospital	Philadelphia	City	2,400	100	..	..	6,484	Yes	1	July	12	1,962	53	$100
St. Francis Hospital	Pittsburgh	Church	587	29	13	58	4,341	Yes	1	Nov.	12	122	32	$150
Warren State Hospital	Warren, Pa.	State	2,063	..	..	..	2,973	No	4	Varies	Indef.	65	30	$100
State Hospital for Mental Diseases	Howard, R. I.	State	2,377	94	3	3	3,202	Yes	1	Varies	Indef.	95	44	$160
Butler Hospital	Providence, R. I.	NPAssn	174	6	33	61	301	Yes	3	April & Oct.	12	9	38	$25
Charles V. Chapin Hospital	Providence, R. I.	City	265	71	7	22	.....	Yes	1	Jan.	12	62	38	.....
Western State Hospital	Western State Hospital, Tenn.	State	1,900	95	..	5	2,473	No	4	June	12	30	24	$36
Galveston State Psychopathic Hosp.	Galveston, Tex.	State	55	100	..	..	350	Yes	3	June	12	3	60	None
John Sealy Hospital	Galveston, Tex.	City	374	70	..	25	.....	Yes	1	Jan.	12	209	57	None
University of Virginia Hospital	University	State	311	24	46	30	288	Yes	1	Dec.	12	113	34	$40
State of Wisconsin General Hospital	Madison	State	652	88	7	5	.....	Yes	1	March	36	257	70	$25
Milwaukee Hosp. for Mental Diseases	Wauwatosa, Wis.	County	920	94	1	5	1,422	Yes	2	Jan. & July	12	14	61	$50
Milwaukee Sanitarium	Wauwatosa, Wis.	Corp	130	3	20	77	370	No	1	Varies	12	1	15	$150
NEUROSURGERY														
University of California Hospital	San Francisco	State	295	68	..	32	.....	Yes	1	Feb.	12	146	73	.....
Presbyterian Hospital [11]	Chicago	Church	453	24	47	29	264	Yes	1	Varies	24	160	57	None
Boston City Hospital	Boston	City	1,732	90	9	1	420	No	2	Sept.	12	809	29	None
Kings County Hospital	Brooklyn	City	3,160	100	..	..	.....	Yes	1	June & Nov.	12	939	19	$100
Neurological Institute of New York	New York City	NPAssn	222	13	22	65	275	No	1	Varies	12	76	47	$100
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	NP-Cy	645	49	39	12	299	Yes	2	Jan.	12	382	66	$41.67
Medical College of Va., Hosp. Division	Richmond	NPAssn	442	7	81	12	.....	Yes	2	Feb.	12	241	33	$25
OBSTETRICS (Also see Obstetrics-Gynecology)														
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	6,445	Yes	4	Varies	18	2,551	59	$10
Hospital for Children	San Francisco	NPAssn	239	14	23	63	637	Yes	1	Feb.	12	19	23	$25
University Hospital	Augusta, Ga.	City	300	52	5	43	1,659	Yes	2	Nov.	12	163	27	$50
Chicago Maternity Center [12]	Chicago	NPAssn	....	100	..	..	3,540	Yes	1	Oct.	12	36	73	None
Cook County Hospital	Chicago	County	3,300	100	..	..	10,816	No	4	June & Dec.	12	1,176	21	None
Provident Hospital (col.)	Chicago	NPAssn	155	18	6	76	355	Yes	1	Jan.	12	59	39	$50
Research and Educational Hospital	Chicago	State	382	100	..	..	811	Yes	2	Varies	12	197	88	$50
Indiana University Hospitals	Indianapolis	State	504	90	3	7	1,153	Yes	1	Feb.	12	153	45	$33.33
Louisville City Hospital	Louisville, Ky.	City	423	90	10	..	1,303	Yes	3	March	36	288	29	$13.91
Johns Hopkins Hospital	Baltimore	NPAssn	962	53	21	26	1,991	Yes	4	May	12	505	50	$50
Provident Hosp. and Free Disp. (col.)	Baltimore	NPAssn	132	83	4	13	194	No	1	Oct.	12	36	17	$25
Sinai Hospital	Baltimore	NPAssn	269	41	8	51	791	Yes	1	Jan.	12	58	27	$47.50
University Hospital	Baltimore	State	450	50	6	44	817	Yes	3	Jan.	12	183	44	None
Boston Lying-in Hospital	Boston	NPAssn	300	8	92	..	3,402	No	2	Varies	12	39	50	$83.33
Massachusetts Memorial Hospitals	Boston	NPAssn	546	23	45	32	619	No	2	March	12	64	40	$91
Providence Hospital	Detroit	Church	406	21	67	12	2,089	No	1	Jan.	12	144	32	$100
Margaret Hague Maternity Hospital	Jersey City, N. J.	County	556	74	26	..	5,404	Yes	7	Varies	21	106	62	$85
Cumberland Hospital	Brooklyn	City	318	100	..	..	1,223	No	1	March	12	155	40	$100
Jewish Hospital	Brooklyn	NPAssn	604	40	30	30	2,163	Yes	3	Dec.	12	238	40	$100
Methodist Episcopal Hospital	Brooklyn	Church	412	16	24	60	.....	Yes	2	July	12	113	28	.....
Norwegian Lutheran Deaconesses' Home and Hospital	Brooklyn	Church	198	5	43	52	922	Yes	1	March	12	105	50	.....
Buffalo City Hospital [4]	Buffalo	CityCo	1,063	..	..	..	733	Yes	2	Nov.	..	294	21	.....
Buffalo General Hospital	Buffalo	NPAssn	465	13	36	51	739	Yes	1	Dec.	12	194	36	$25
Millard Fillmore Hospital	Buffalo	NPAssn	309	21	34	45	1,400	Yes	1	Dec.	12	119	46	$25
Lenox Hill Hospital	New York City	NPAssn	595	55	..	45	730	Yes	1	Varies	12	127	38	$35
Morrisania City Hospital	New York City	City	539	100	..	..	2,115	No	2	Varies	12	247	27	None
Sloane Hospital for Women	New York City	NPAssn	323	33	42	25	5,334	Yes	3	Varies	12	7	57	$50
Cincinnati General Hospital	Cincinnati	City	925	80	13	7	2,341	Yes	3	Feb.	12	708	42	.....
City Hospital	Cleveland	City	1,670	100	..	..	1,662	Yes	3	Jan.	12	628	38	$37
Mount Sinai Hospital	Cleveland	NPAssn	270	34	12	54	1,307	No	1	Dec.	12	57	26	$60
St. John's Hospital	Cleveland	Church	210	12	10	78	730	No	1	Dec.	12	78	32	$25
St. Luke's Hospital	Cleveland	Church	392	23	2	75	1,290	Yes	2	Dec.	24	92	24	$25
University Hospitals	Cleveland	NPAssn	972	37	14	49	2,067	Yes	5	Jan.	12	348	54	$35
Miami Valley Hospital	Dayton, O.	NPAssn	371	33	26	41	1,062	No	1	Jan.	12	217	47	$75
State University Hospital and Crippled Children's Hospital	Oklahoma City	State	510	62	32	6	523	Yes	1	Jan.	12	208	53	$75
Hospital of the Univ. of Pennsylvania	Philadelphia	State	598	36	24	40	1,095	Yes	1	Jan.	12	216	67	None
Elizabeth Steele Magee Hospital	Pittsburgh	NPAssn	495	60	8	32	2,958	Yes	3	Jan.	12	81	39	$41.63
John Gaston Hospital	Memphis, Tenn.	City	400	98	..	2	2,040	Yes	1	July	12	221	19	$65
Baylor University Hospital	Dallas, Tex.	Church	380	20	20	60	1,089	Yes	1	April	12	95	30	$125
Medical College of Va., Hosp. Division	Richmond	NPAssn	442	7	81	12	1,032	Yes	1	Feb.	12	241	33	$50
OBSTETRICS-GYNECOLOGY (Also see Obstetrics and Gynecology)														
Hillman Hospital	Birmingham, Ala.	County	474	100	..	..	3,231	Yes	2	Jan.	12	241	26	$30
White Memorial Hospital	Los Angeles	Church	120	..	25	75	.....	Yes	2	April	36	46	32	$65
Alameda County Hospital [3]	Oakland, Calif.	County	372	100	..	..	2,348	No	3	Dec.	12	852	40	$40
San Francisco Hospital	San Francisco	CyCo	1,487	100	..	..	2,566	No	3	Nov.	12	555	53	$50
Stanford University Hospitals	San Francisco	NPAssn	324	6	39	55	1,369	Yes	3	Jan.	12	118	53	$23.75
University of California Hospital	San Francisco	State	293	68	..	32	1,135	Yes	3	Feb.	12	146	73	$50
Santa Clara County Hospital	San Jose, Calif.	County	495	98	2	..	.....	Yes	1	Jan.	12	210	39	.....
New Haven Hospital	New Haven, Conn.	NPAssn	511	37	37	26	1,445	Yes	1	Jan. & July	12	252	57	.....
Columbia Hospital for Women and Lying-In Asylum	Washington, D. C.	NPAssn	210	...	60	40	3,472	Yes	6	May & Nov.	12	23	21	None
Freedmen's Hospital (col.)	Washington, D. C.	Fed	376	86	..	14	1,489	Yes	1	June	12	180	49	$51.66

Numerical references will be found on page 715.

		Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Autopsies	Autopsy Percentage	Beginning Salary per Month
OBSTETRICS-GYNECOLOGY—Continued														
Gallinger Municipal Hospital	Washington, D. C.	City	1,220	100	..	..	5,029	No	2	Jan.	12	497	34	$30
Grady Hospital	Atlanta, Ga.	City	325	100	..	..	3,885	Yes	1	Jan.	12	264	20	$50
Grady Hospital, Emory University Division (colored unit)	Atlanta, Ga.	City	275	100	..	..	2,426	Yes	2	Jan.	12	264	20	$50
Chicago Lying-in Hospital and Disp.	Chicago	NPAssn	322	32	42	26	6,467	Yes	6	Varies	36	50	69	$33.33
Presbyterian Hospital	Chicago	Church	453	24	47	29	1,592	Yes	1	Varies	12	160	57	None
St. Luke's Hospital	Chicago	NPAssn	659	4	20	76	1,622	Yes	2	Jan.	12	128	40	None
University of Chicago Clinics (see Chicago Lying-in Hospital and Disp.)	Chicago													
University Hospitals	Iowa City	State	954	87	8	5	.....	Yes	5	July	12	325	57	$20.83
University of Kansas Hospitals	Kansas City, Kan.	State	250	15	37	48	960	Yes	2	Oct.	36	216	84	$81
Charity Hospital	New Orleans	State	1,913	100	..	..	17,974	Yes	2	May & June	12	1,347	40	$25
Touro Infirmary	New Orleans	NPAssn	366	31	38	31	2,129	Yes	2	Jan. to March	12	142	46	$25
Mercy Hospital	Baltimore	Church	300	53	11	36	871	No	1	Jan.	12	86	38	$25
St. Joseph's Hospital	Baltimore	Church	285	41	12	47	1,019	Yes	2	Jan.	12	70	30	.....
University Hospital	Ann Arbor, Mich.	State	1,285	79	..	21	2,668	Yes	2	Jan.	12	470	57	$25
City of Detroit Receiving Hospital [13]	Detroit	City	650	100	..	..	1,450	Yes	4	Dec.	48	577	98	$83.33
Grace Hospital	Detroit	NPAssn	538	31	42	27	2,282	Yes	1	Feb.	12	130	18	$50
Harper Hospital	Detroit	NPAssn	725	10	..	90	1,186	Yes	2	Jan.	12	108	22	$45
Herman Kiefer Hospital [13]	Detroit	City	1,400	98	2	..	3,513	No	2	Jan.	48	151	23	/.....
Woman's Hospital	Detroit	NPAssn	320	6	12	82	4,633	Yes	9	Feb.	12	39	27	$25
Minneapolis General Hospital [1]	Minneapolis	City	687	95	5	..	4,380	Yes	2	Varies	36	321	39	$25
Ancker Hospital [1]	St. Paul	CyCo	900	100	..	..	1,070	Yes	1	March	36	516	65	.....
Jewish Hospital	St. Louis	NPAssn	290	29	52	19	1,367	No	1	Dec.	12	56	31	$60
St. Louis City Hospital	St. Louis	City	806	100	..	..	3,406	Yes	3	March	12	764	43	$75
St. Louis Maternity Hospital [14]	St. Louis	NPAssn	196	19	64	17	3,403	Yes	11	July	12	23	82	None
St. Luke's Hospital	St. Louis	Church	210	14	31	55	1,030	Yes	1	Dec.	12	42	25	$50
St. Mary's Group of Hospitals	St. Louis	Church	551	36	31	33	1,634	Yes	6	March	36	164	44	$25
Kings County Hospital	Brooklyn	City	3,160	100	..	..	7,454	Yes	4	June & Nov.	12	939	19	None
Long Island College Hospital	Brooklyn	NPAssn	473	18	34	48	2,137	Yes	3	Jan.	12	126	34	$22.50
Bellevue Hospital	New York City	City	2,333	100	..	..	6,616	Yes	7	Jan. & July	36	1,344	38	$83.33
Lying-in Hospital (Unit of New York Hospital)	New York City	NPAssn	324	8	73	19	4,313	Yes	10	Jan.	12	8	30	None
Metropolitan Hospital	New York City	City	1,425	100	..	..	2,064	Yes	2	Feb.	12	214	19	.....
Sloane Hospital for Women	New York City	NPAssn	332	33	42	25	6,450	Yes	6	Varies	12	7	33	$50
Woman's Hospital	New York City	NPAssn	300	7	70	23	3,507	Yes	9	Varies	24	81	47	None
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	NP-Cy	645	49	39	12	3,285	Yes	4	Jan.	12	382	66	$41.67
Duke Hospital	Durham, N. C.	NPAssn	456	66	24	10	1,748	Yes	7	Jan.	36	195	57	$41.67
Univ. of Oregon Med. School Hosps.	Portland	Co-St	405	93	..	7	1,699	Yes	3	Jan.	12	409	65	$30
Kensington Hospital for Women	Philadelphia	NPAssn	101	28	14	58	2,655	Yes	2	July	24	10	29	$25
Pennsylvania Hospital	Philadelphia	NPAssn	560	43	32	25	3,453	Yes	2	Varies	12	191	50	None
Philadelphia General Hospital	Philadelphia	City	2,400	100	..	..	3,544	Yes	1	July	12	1,902	53	$100
St. Francis Hospital	Pittsburgh	Church	587	29	13	58	582	Yes	1	Nov.	12	122	33	$50
Nashville General Hospital	Nashville, Tenn.	City	305	84	..	16	1,636	Yes	2	Dec.	12	157	35	$75
Vanderbilt University Hospital	Nashville, Tenn.	NPAssn	210	34	34	32	751	No	3	March	12	189	61	$35.40
John Sealy Hospital	Galveston, Tex.	City	374	70	5	25	1,063	Yes	1	Jan.	12	209	57	None
University of Virginia Hospital	University	State	311	24	46	30	897	Yes	2	Dec.	12	113	34	None
State of Wisconsin General Hospital	Madison	State	652	88	7	5	.....	Yes	2	March	36	257	70	$25
Milwaukee County General Hospital	Wauwatosa, Wis.	County	1,125	100	..	..	2,700	Yes	2	May	12	404	31	$50
OPHTHALMOLOGY (Also see Ophthalmology-Otolaryngology)														
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	497	Yes	2	Varies	24	2,551	59	$10
White Memorial Hospital	Los Angeles	Church	120	..	25	75	.....	Yes	1	April	12	46	38	$25
Stanford University Hospitals	San Francisco	NPAssn	324	6	39	55	498	Yes	2	Jan.	12	118	3	$33.75
University of California Hospitals	San Francisco	State	293	68	..	32	195	Yes	1	Feb.	12	146	73	$50
Colorado General Hospital [1]	Denver	State	178	90	10	..	117	Yes	1	Jan.	12	175	81	$50
Episcopal Eye, Ear and Throat Hosp.	Washington, D. C.	Church	100	21	28	51	9,201	Yes	5	Varies	16	5	39	None
Illinois Eye and Ear Infirmary	Chicago	State	200	100	..	..	.....	Yes	8	Sept.	12	3	38	None
Michael Reese Hospital	Chicago	NPAssn	626	48	29	23	508	Yes	1	Jan. & July	12	279	51	None
Passavant Memorial Hospital	Chicago	NPAssn	165	5	1	94	177	Yes	1	Jan. & July	12	45	60	None
Presbyterian Hospital	Chicago	Church	453	24	47	29	488	Yes	2	Varies	12	160	57	None
Research and Educational Hospital	Chicago	State	382	100	..	..	266	Yes	1	Varies	12	197	88	$50
University of Chicago Clinics	Chicago	NPAssn	293	26	69	5	.....	Yes	1	Jan.	12	184	72	None
Indianapolis City Hospital	Indianapolis	City	577	92	4	4	202	Yes	1	April	12	414	41	$20.83
University Hospitals	Iowa City	State	954	87	8	5	.....	Yes	3	July	12	325	57	$20.83
Eye, Ear, Nose and Throat Hospital	New Orleans	NPAssn	70	50	25	25	3,374	Yes	2	Varies	12	*	..	None
Johns Hopkins Hospital	Baltimore	NPAssn	902	53	21	26	1,074	Yes	4	May	12	505	80	$30
Massachusetts Eye and Ear Infirmary	Boston	NPAssn	231	78	..	22	2,181	Yes	7	Varies	21	21	43	None
University Hospital	Ann Arbor, Mich.	State	1,285	79	..	21	1,063	Yes	3	Jan.	12	470	57	$25
Barnes Hospital	St. Louis	Church	300	16	4	80	.....	.....	5	Dec.	12	170	57	None
St. Louis City Hospital	St. Louis	City	806	100	..	..	186	Yes	1	March	12	764	43	.....
St. Mary's Group of Hospitals [1]	St. Louis	Church	551	36	31	33	99	Yes	1	March	36	164	44	$25
Jersey City Hospital	Jersey City, N. J.	City	1,200	94	..	6	572	Yes	1	March & Oct.	12	158	16	None
Kings County Hospital	Brooklyn	City	3,160	100	..	..	293	Yes	1	June & Nov.	12	939	19	.....
Buffalo City Hospital [4]	Buffalo	CyCo	1,063	...	..	..	183	Yes	2	Nov.	..	204	21	.....
Bellevue Hospital	New York City	City	2,333	100	..	..	663	Yes	5	Jan. & July	36	1,344	38	None
Herman Knapp Memorial Eye Hosp.	New York City	Corp	50	12	76	12	815	Yes	2	Varies	18	*	..	None
Mount Sinai Hospital	New York City	NPAssn	780	57	16	27	.....	Yes	1	Varies	12	400	52	$45
New York Eye and Ear Infirmary	New York City	NPAssn	170	10	16	74	3,256	Yes	7	March & Sept.	21	2	18	None
Presbyterian Hospital	New York City	NPAssn	905	33	42	25	1,647	Yes	6	Varies	12	231	45	$125
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	NP-Cy	645	49	39	12	222	Yes	2	Jan.	12	382	66	$41.67
Cincinnati General Hospital	Cincinnati	City	925	80	13	7	288	Yes	2	Feb.	24	708	42	.....
City Hospital	Cleveland	City	1,670	100	..	..	302	Yes	1	Jan.	12	628	38	$37
University Hospitals	Cleveland	NPAssn	972	37	14	49	422	Yes	2	Jan.	12	348	54	$35
Univ. of Oregon Med. School Hosps.	Portland	Co-St	405	93	..	7	217	Yes	1	Jan.	12	409	65	$40
Graduate Hosp. of the Univ. of Pa.	Philadelphia	NPAssn	475	36	9	55	1,200	Yes	1	Jan.	12	100	49	None
Wills Hospital	Philadelphia	NPAssn	200	73	8	19	3,800	Yes	8	Varies	21	*	..	None
OPHTHALMOLOGY-OTOLARYNGOLOGY (Also see Ophthalmology and Otolaryngology)														
Hillman Hospital	Birmingham, Ala.	County	474	100	..	..	741	Yes	1	Jan.	12	241	26	$30
San Diego County General Hospital	San Diego, Calif.	County	663	100	..	..	1,917	Yes	1	April	12	276	42	$75
Hospital for Children	San Francisco	NPAssn	259	14	23	63	260	Yes	1	Feb.	12	19	23	$25
Gallinger Municipal Hospital	Washington, D. C.	City	1,220	100	..	..	454	No	1	Jan.	12	497	34	$30
Grady Hospital	Atlanta, Ga.	City	325	100	..	..	1,643	Yes	2	Jan.	12	264	20	$50

Numerical references will be found on page 715.

V 107
1936

		Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Autopsies	Autopsy Percentage	Beginning Salary per Month
OPHTHALMOLOGY-OTOLARYNGOLOGY—Continued														
Grady Hospital, Emory University Division (colored unit)	Atlanta, Ga.	City	275	100	..	..	671	Yes	2	Jan.	12	264	20	$15
Cook County Hospital	Chicago	County	3,300	100	..	..	7,457	Yes	6	June & Dec.	12	1,176	21	None
Indiana University Hospitals	Indianapolis	State	504	90	3	7	1,661	Yes	2	Feb.	12	153	45	$33.33
Charity Hospital	New Orleans	State	1,913	100	..	..	6,292	Yes	3	May & June	12	1,347	40	$25
Touro Infirmary	New Orleans	NPAssn	366	31	38	31	1,582	Yes	1	Jan. to March	12	142	46	$25
Baltimore Eye, Ear and Throat Charity Hospital	Baltimore	NPAssn	60	51	..	49	2,559	No	3	Jan.	12	1	33	None
University Hospital	Baltimore	State	450	50	6	44	846	Yes	1	Jan.	12	183	44	None
Boston City Hospital	Boston	City	1,732	90	9	1	.....	Yes	1	Jan.	21	809	29	.....
City of Detroit Receiving Hospital	Detroit	City	650	100	..	..	1,071	Yes	1	Dec.	12	577	28	$83.33
Grace Hospital	Detroit	NPAssn	528	31	42	27	1,287	Yes	1	Feb.	12	130	18	$50
Harper Hospital	Detroit	NPAssn	725	10	..	90	2,852	Yes	2	Jan.	12	108	22	$25
Eloise Hospital (Dr. William J. Seymour Hospital)	Eloise, Mich.	County	1,368	100	..	..	6,657	Yes	2	March	12	551	44	$37
Minneapolis General Hospital[1,2]	Minneapolis	City	687	95	5	..	1,376	Yes	2	Varies	36	331	39	$25
Ancker Hospital	St. Paul	CyCo	900	100	..	..	1,409	Yes	2	March	12	516	66	$50
Jewish Hospital	St. Louis	NPAssn	290	29	52	19	997	Yes	1	Dec.	12	56	31	$60
Newark City Hospital	Newark, N. J.	City	700	100	..	..	.....	....	1	July	12	301	29	.....
Newark Eye and Ear Infirmary	Newark, N. J.	NPAssn	69	33	2	65	2,563	Yes	3	Varies	12	16	41	None
Long Island College Hospital	Brooklyn	NPAssn	473	18	34	48	980	Yes	1	Jan.	12	126	34	$45
Harlem Eye and Ear Hospital	New York City	NPAssn	50	31	37	32	1,295	Yes	3	Varies	12	*	..	None
Lenox Hill Hospital	New York City	NPAssn	595	55	..	45	1,548	Yes	1	Varies	12	127	38	None
Manhattan Eye, Ear and Throat Hosp.	New York City	NPAssn	212	....	..	15	16,603	Yes	16	Varies	24	8	29	None
Metropolitan Hospital	New York City	City	1,425	100	..	..	1,285	Yes	1	Feb.	12	214	19	$100
N.Y. Polyclinic Med. School and Hosp.	New York City	NPAssn	346	17	70	13	1,903	Yes	4	Varies	24	43	23	None
N.Y. Post-Grad. Med. School and Hosp.	New York City	NPAssn	411	13	3	84	2,928	Yes	6	Varies	36	81	26	.....
Grasslands Hospital	Valhalla, N. Y.	County	932	87	13	..	942	Yes	1	April & Oct.	12	295	64	$120
Duke Hospital	Durham, N. C.	NPAssn	456	66	24	10	751	Yes	2	Jan.	24	195	57	$41.67
State University Hospital and Crippled Children's Hospital	Oklahoma City	State	510	62	32	6	654	Yes	1	Jan.	12	208	53	$50
Memphis Eye, Ear, Nose and Throat Hospital	Memphis, Tenn.	NPAssn	75	43	18	39	1,704	Yes	3	March & Oct.	18	1	25	None
Medical College of Va., Hosp. Division	Richmond	NPAssn	442	7	81	12	1,131	Yes	2	Feb.	12	241	33	$25
University of Virginia Hospital	University	State	311	24	46	30	965	Yes	2	Dec.	12	113	34	None
State of Wisconsin General Hospital	Madison	State	652	88	7	5	.....	Yes	2	March	36	257	70	$25
Milwaukee County General Hospital	Wauwatosa, Wis.	County	1,125	100	..	..	1,557	Yes	1	May	12	404	31	$50
ORTHOPEDICS														
Hillman Hospital	Birmingham, Ala.	County	474	100	..	..	282	Yes	1	Jan.	12	241	26	$141.75[3]
Children's Hospital	Los Angeles	NPAssn	193	59	31	10	364	Yes	1	March	12	141	27	$60
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	4,982	Yes	3	Varies	24	2,551	59	$10
Orthopaedic Hospital	Los Angeles	NPAssn	85	69	20	11	1,904	Yes	2	Varies	24	1	33	$50
San Francisco Hospital	San Francisco	CyCo	1,487	100	..	..	.....	Yes	3	Nov.	12	555	58	$50
Shriners Hosp. for Crippled Children	San Francisco	Frat	60	100	..	..	334	Yes	2	Jan.	12	*	..	$25
University of California Hospital	San Francisco	State	293	68	..	32	248	Yes	1	Feb.	12	146	73	$25
New Haven Hospital	New Haven, Conn.	NPAssn	511	37	37	26	.....	Yes	1	Jan. & July	12	252	57	.....
Cook County Hospital	Chicago	County	3,300	100	..	..	894	No	2	June & Dec.	12	1,176	21	None
Research and Educational Hospital	Chicago	State	382	100	..	..	90	Yes	3	Varies	36	197	88	$50
University of Chicago Clinics	Chicago	NPAssn	293	26	69	5	.....	Yes	3	Jan.	12	184	72	None
Indiana University Hospitals	Indianapolis	State	504	90	3	7	899	Yes	2	Feb.	12	153	45	$33.33
University Hospitals	Iowa City	State	954	87	8	5	.....	Yes	9	July	12	325	57	$20.83
Charity Hospital	New Orleans	State	1,913	100	..	..	1,288	Yes	2	May & June	12	1,347	40	$25
Shriners Hosp. for Crippled Children	Shreveport, La.	Frat	60	100	..	..	260	Yes	1	Varies	24	*	..	$125
James Lawrence Kernan Hospital	Baltimore	NPAssn	80	93	4	3	193	Yes	1	Jan.	12	2	50	$80
Johns Hopkins Hospital	Baltimore	NPAssn	902	53	21	26	428	Yes	3	May	12	505	80	$50
Boston City Hospital	Boston	City	1,732	90	9	1	1,530	Yes	1	Jan.	12	809	29	$83.33
Children's Hospital	Boston	NPAssn	283	2	58	40	487	Yes	1	Varies	12	73	49	$80
Massachusetts General Hospital	Boston	NPAssn	424	47	34	19	523	Yes	1	Varies	12	285	57	$41.67
Shriners Hosp. for Crippled Children	Springfield, Mass.	Frat	60	100	..	..	379	Yes	1	July	12	1	50	$25
City of Detroit Receiving Hospital	Detroit	City	650	100	..	..	1,539	Yes	2	Dec.	24	577	28	$83.33
Biodgett Memorial Hospital	Grand Rapids, Mich.	NPAssn	150	20	55	25	210	Yes	1	Dec.	12	40	36	$50
Gillette State Hospital for Crippled Children	St. Paul	State	250	100	..	..	759	Yes	1	March	12	14	100	$100
State Hospital for Crippled Children (Unit of University Hospitals)	Columbia, Mo.	State	25	100	..	..	438	Yes	1	Varies	12	6	18	None
Shriners Hosp. for Crippled Children	St. Louis	Frat	100	100	..	..	503	Yes	1	Jan.	12	*	..	.....
Jersey City Hospital	Jersey City, N. J.	City	1,200	94	..	6	1,651	Yes	2	March & Oct.	12	158	16	None
New Jersey Orthopaedic Hospital and Dispensary	Orange	NPAssn	36	34	29	37	405	Yes	2	Varies	18	*	..	$50
Kings County Hospital	Brooklyn	City	3,160	100	..	..	1,336	Yes	2	June & Nov.	24	939	19	None
Long Island College Hospital	Brooklyn	NPAssn	473	18	34	48	386	Yes	2	Jan.	12	126	34	$22.50
Bellevue Hospital	New York City	City	2,333	100	..	..	137	Yes	3	Jan. & July	12	1,344	38	None
Hospital for Joint Diseases	New York City	NPAssn	255	10	33	57	2,719	Yes	9	Jan.	24	65	41	$25
Metropolitan Hospital	New York City	City	1,425	100	..	..	531	Yes	1	Feb.	12	214	19	$75
N.Y. Orthopaedic Disp. and Hospital	New York City	NPAssn	302	....	..	..	2,156	Yes	8	Varies	24	1	25	$50
N.Y. Post-Grad. Med. School and Hosp.	New York City	NPAssn	411	13	3	84	886	Yes	1	Varies	12	81	20	.....
New York Society for the Relief of the Ruptured and Crippled	New York City	NPAssn	256	11	..	89	1,348	Yes	8	Jan. & July	24	17	50	$20
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	NP-Cy	645	49	39	12	381	Yes	1	Jan.	12	382	66	$66.66
Sea View Hospital	Staten Island, N. Y.	City	1,788	99	1	..	289	Yes	2	May & Nov.	12	244	49	$100
New York State Reconstruction Home	West Haverstraw	State	310	98	2	..	572	No	3	Jan. & July	18	*	..	$100
Duke Hospital	Durham, N. C.	NPAssn	456	66	24	10	554	Yes	2	Jan.	36	195	57	$41.67
Cincinnati General Hospital	Cincinnati	City	925	80	13	7	346	Yes	1	Feb.	12	708	42	.....
Mount Sinai Hospital	Cleveland	NPAssn	270	34	12	54	.....	No	1	Dec.	12	57	26	$60
University Hospitals	Cleveland	NPAssn	972	37	14	49	603	Yes	1	Jan.	12	348	54	$35
State University Hospital and Crippled Children's Hospital	Oklahoma City	State	510	62	32	6	996	Yes	4	Jan.	12	208	53	Varies
Shriners Hosp. for Crippled Children	Portland, Ore.	Frat	50	100	..	..	298	Yes	1	March	12	*	..	$25
State Hospital for Crippled Children	Elizabethtown, Pa.	State	125	100	..	..	161	Yes	2	July	12	1	33	$100
Philadelphia Orthopaedic Hospital and Infirmary for Nervous Diseases	Philadelphia	NPAssn	140	37	37	26	274	Yes	1	Varies	12	1	25	$40
Willis C. Campbell Clinic[1,16]	Memphis, Tenn.	Part	50	....	..	100	817	Yes	3	Varies	24	*	..	$50
Texas Scottish Rite Hospital for Crippled Children	Dallas	Frat	40	100	..	..	604	Yes	1	Jan.	12	*	..	$100
University of Virginia Hospital	University	State	311	24	46	30	400	Yes	1	Dec.	12	113	34	$30
State of Wisconsin General Hospital	Madison	State	652	88	7	5	.....	Yes	3	March	36	257	70	$25

Numerical references will be found on page 715.

	Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Autopsies	Autopsy Percentage	Beginning Salary per Month
OTOLARYNGOLOGY (Also see Ophthalmology-Otolaryngology)													
Children's Hospital	NPAssn	193	59	31	10	1,128	Yes	1	March	12	141	27	$90
Los Angeles County Hospital	Los Angeles County	3,410	100	..	..	1,287	Yes	3	Varies	24	2,551	59	$10
White Memorial Hospital	Los Angeles Church	120	..	25	75	.....	Yes	1	April	24	46	32	$65
San Francisco Hospital	San Francisco CyCo	1,487	100	..	..	911	No	2	Nov.	12	555	53	$50
Stanford University Hospitals	San Francisco NPAssn	324	6	39	55	1,476	Yes	2	Jan.	12	118	53	$23.75
University of California Hospital	San Francisco State	293	68	..	32	724	Yes	1	Feb.	12	146	73	$50
New Haven Hospital	New Haven, Conn. NPAssn	511	37	37	26	1,104	Yes	2	Jan. & July	12	252	57	.....
Episcopal Eye, Ear and Throat Hosp.	Washington, D. C. Church	100	21	28	51	7,112	Yes	3	Varies	12	5	38	None
Illinois Eye and Ear Infirmary	Chicago State	200	100	..	..	.....	Yes	7	Sept.	12	3	38	None
Passavant Memorial Hospital	Chicago NPAssn	165	5	1	94	270	Yes	1	Jan. & July	12	45	60	None
Presbyterian Hospital	Chicago Church	453	24	47	29	1,869	Yes	2	Varies	12	160	57	None
Research and Educational Hospital	Chicago State	332	100	..	..	720	Yes	1	Varies	12	197	88	$50
University of Chicago Clinics	Chicago NPAssn	293	26	69	5	.....	Yes	1	Jan.	12	184	72	None
Indianapolis City Hospital	Indianapolis City	577	92	4	4	1,864	Yes	1	April	12	414	41	$20.83
University Hospitals	Iowa City State	954	87	8	5	.....	Yes	13	July	12	325	57	$20.83
Eye, Ear, Nose and Throat Hospital	New Orleans NPAssn	70	23	25	52	5,836	Yes	7	Varies	12	*	..	None
Johns Hopkins Hospital	Baltimore NPAssn	902	53	21	26	1,115	Yes	2	May	12	505	80	$50
Beth Israel Hospital	Boston NPAssn	215	18	32	50	631	No	1	Varies	12	102	51	.....
Massachusetts Eye and Ear Infirmary	Boston NPAssn	231	78	..	22	3,484	Yes	7	Varies	21	21	43	None
Memorial Hospital	Worcester, Mass. NPAssn	315	17	7	76	1,384	No	1	Jan.	12	62	38	$41.67
University Hospital	Ann Arbor, Mich. State	1,285	79	..	21	2,607	Yes	3	Jan.	12	470	57	$25
Barnes Hospital	St. Louis Church	300	16	4	80	.....	....	9	Dec.	12	170	57	None
St. Louis City Hospital	St. Louis City	806	100	..	..	1,719	Yes	1	March	12	764	43	.....
St. Mary's Group of Hospitals [3]	St. Louis Church	551	30	31	39	949	Yes	2	March	36	164	44	$25
Jersey City Hospital	Jersey City, N. J. City	1,200	94	..	6	3,941	Yes	1	March & Oct.	12	158	16	None
Kings County Hospital	Brooklyn City	3,160	100	..	..	3,544	Yes	2	March & Nov.	12	939	19	None
Buffalo City Hospital [4]	Buffalo CyCo	1,063	..	..	..	432	Yes	2	Nov.	..	204	21	.....
Buffalo General Hospital	Buffalo NPAssn	465	13	36	51	1,188	Yes	1	Dec.	12	194	36	$50
Bellevue Hospital	New York City City	2,533	100	..	..	3,277	Yes	6	Jan. & July	24	1,344	38	.....
Mount Sinai Hospital	New York City NPAssn	780	57	16	27	.....	Yes	2	Varies	12	400	52	$45
New York Eye and Ear Infirmary	New York City NPAssn	170	10	16	74	2,399	Yes	8	March & Sept.	21	2	18	None
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y. NP-Cy	645	49	39	12	1,473	Yes	2	Jan.	12	382	66	$41.67
Sea View Hospital	Staten Island, N. Y. City	1,788	99	1	..	2,186	Yes	2	May & Nov.	12	244	49	$100
Cincinnati General Hospital	Cincinnati City	925	80	13	7	1,420	Yes	3	Feb.	24	708	42	.....
City Hospital	Cleveland City	1,670	100	..	..	1,013	Yes	1	Jan.	18	698	38	$37
St. Luke's Hospital	Cleveland Church	392	23	2	75	1,760	Yes	2	Dec.	24	92	24	$25
University Hospitals	Cleveland NPAssn	972	37	14	49	2,142	Yes	3	Jan.	24	348	54	$35
Univ. of Oregon Med. School Hosps.	Portland Co-St	405	93	..	7	1,565	Yes	1	Jan.	12	409	65	$40
Geo. F. Geisinger Memorial Hospital	Danville, Pa. NPAssn	198	25	31	44	446	No	1	Jan.	12	58	30	.....
Graduate Hospital of the Univ. of Pa.	Philadelphia NPAssn	475	36	9	55	2,954	Yes	1	Jan.	12	100	49	None
PATHOLOGY													
Hillman Hospital	Birmingham, Ala. County	474	100	..	..	.....	Yes	1	Jan.	12	241	26	$40
Children's Hospital	Los Angeles NPAssn	193	59	31	10	.....	Yes	1	March	12	141	27	$40
Los Angeles County Hospital	Los Angeles County	3,410	100	..	..	.....	Yes	4	Varies	24	2,551	59	$10
White Memorial Hospital	Los Angeles Church	120	..	25	75	.....	Yes	2	April	36	46	32	$65
Mount Zion Hospital	San Francisco NPAssn	189	18	13	69	.....	Yes	1	Feb.	12	82	48	$50
San Francisco Hospital	San Francisco CyCo	1,487	100	..	..	.....	No	1	Nov.	12	555	53	$50
University of California Hospital	San Francisco State	293	68	..	32	.....	Yes	1	Feb.	12	146	73	$75
Denver General Hospital	Denver CyCo	589	100	..	..	.....	No	1	Varies	12	232	38	$50
New Haven Hospital	New Haven, Conn. NPAssn	511	37	37	26	.....	Yes	3	Jan. & July	12	252	57	.....
Gallinger Municipal Hospital	Washington, D. C. City	1,220	100	..	..	.....	No	2	Jan.	12	497	34	$30
Garfield Memorial Hospital	Washington, D. C. NPAssn	311	1	25	74	.....	Yes	1	Dec.	12	85	38	$40
Children's Memorial Hospital	Chicago NPAssn	204	66	33	1	.....	Yes	1	Varies	12	85	48	$50
Cook County Hospital	Chicago County	3,300	100	..	..	.....	No	4	June & Dec.	12	1,176	21	None
Michael Reese Hospital	Chicago NPAssn	626	48	29	23	.....	Yes	1	Jan. & July	12	279	51	$150
Presbyterian Hospital	Chicago Church	453	24	47	29	.....	Yes	2	Varies	12	160	57	$25
Provident Hospital (col.)	Chicago NPAssn	155	18	6	76	.....	Yes	1	Jan.	12	59	39	$50
Research and Educational Hospital	Chicago State	332	100	..	..	.....	Yes	1	Varies	12	197	88	$40
St. Luke's Hospital [1]	Chicago NPAssn	650	4	20	76	.....	Yes	2	Jan.	12	328	40	.....
University of Chicago Clinics	Chicago NPAssn	293	26	69	5	.....	Yes	1	Jan.	12	184	72	None
Evanston Hospital	Evanston, Ill. NPAssn	270	15	38	47	.....	Yes	1	April	12	95	66	$83.33
Indianapolis City Hospital	Indianapolis City	577	92	4	4	.....	Yes	1	April	12	414	41	$20.83
Indiana University Hospitals	Indianapolis State	504	90	3	7	.....	Yes	1	Feb.	12	153	45	$33.33
Methodist Episcopal Hospital	Indianapolis Church	526	...	25	75	.....	Yes	2	Jan.	12	153	33	$50
University of Kansas Hospitals	Kansas City, Kan. State	250	15	37	48	.....	Yes	2	Oct.	36	216	84	$61
Louisville City Hospital	Louisville, Ky. City	423	90	10	..	.....	Yes	2	March	24	288	29	$13.91
Charity Hospital	New Orleans State	1,403	100	..	..	.....	Yes	1	May & June	12	1,347	40	$25
Touro Infirmary	New Orleans NPAssn	366	31	38	31	.....	Yes	1	Jan. to March	12	142	46	$25
Baltimore City Hospitals (General)	Baltimore City	963	100	..	..	.....	No	2	Jan.	12	440	41	$12.50
Johns Hopkins Hospital	Baltimore NPAssn	902	53	21	26	.....	Yes	3	May	12	505	80	$50
Beth Israel Hospital	Boston NPAssn	215	18	32	50	.....	No	2	Varies	12	102	51	.....
Boston City Hospital	Boston City	1,732	90	9	1	.....	....	5	Varies	Indef.	809	29	None
Children's Hospital	Boston NPAssn	283	2	58	40	.....	Yes	1	Varies	12	73	49	.....
Massachusetts General Hospital	Boston NPAssn	424	47	34	19	.....	Yes	1	Varies	12	285	57	$41.67
New England Deaconess Hospital	Boston Church	285	8	58	34	.....	Yes	1	Jan.	12	144	60	$25
Peter Bent Brigham Hospital	Boston NPAssn	247	44	28	27	.....	Yes	1	Varies	12	171	61	$83.33
University Hospital	Ann Arbor, Mich. State	1,285	79	..	21	.....	Yes	1	Jan.	12	470	57	$25
City of Detroit Receiving Hospital	Detroit City	650	100	..	..	.....	Yes	1	Dec.	12	577	28	$83.33
Ancker Hospital	St. Paul CyCo	900	100	..	..	.....	Yes	1	March	12	516	65	$50
St. Joseph Hospital	Kansas City, Mo. Church	235	20	50	30	.....	No	1	Oct.	12	179	84	$25
Barnes Hospital	St. Louis Church	300	16	4	80	.....	No	1	Dec.	12	170	57	None
St. Louis City Hospital	St. Louis City	806	100	..	..	.....	Yes	1	March	12	764	43	$125
Mary Hitchcock Memorial Hospital	Hanover, N. H. NPAssn	142	40	36	24	.....	Yes	1	July	12	99	87	$83.33
Newark Beth Israel Hospital	Newark, N. J. NPAssn	414	18	24	58	.....	No	2	July	24	145	33	$25
Albany Hospital	Albany, N. Y. NPAssn	610	8	75	17	.....	Yes	2	Dec.	12	353	72	$40
Bender Hygienic Laboratory [17]	Albany, N. Y. NPAssn	...	...	...	...	.....	Yes	2	Varies	12	162	..	$75
Jewish Hospital	Brooklyn NPAssn	664	30	40	30	.....	Yes	6	Dec.	12	238	40	$50
Kings County Hospital	Brooklyn City	3,160	100	..	..	.....	Yes	1	June & Nov.	12	939	19	.....
Long Island College Hospital	Brooklyn NPAssn	473	18	34	48	.....	Yes	1	Jan.	12	126	34	$45
St. John's Hospital	Brooklyn Church	234	55	6	39	.....	No	1	Jan.	12	117	50	$25
Buffalo City Hospital [4]	Buffalo CyCo	1,063	..	..	..	.....	Yes	2	Nov.	..	204	21	.....
Buffalo General Hospital	Buffalo NPAssn	465	13	36	51	.....	Yes	1	Dec.	12	194	36	$25
Millard Fillmore Hospital	Buffalo NPAssn	309	21	34	45	.....	Yes	1	Dec.	12	119	46	$50
Mary Immaculate Hospital	Jamaica, N. Y. Church	310	5	38	57	.....	Yes	1	.....	12	131	36	None
Harlem Hospital	New York City City	325	100	..	..	.....	Yes	2	Varies	12	396	25	None
Lenox Hill Hospital	New York City NPAssn	595	55	..	45	.....	Yes	1	Varies	12	127	38	None
Lincoln Hospital	New York City City	265	100	..	..	.....	Yes	1	Jan. & July	12	261	36	None
Metropolitan Hospital	New York City City	1,425	100	..	..	.....	Yes	1	Feb.	12	214	19	None
Montefiore Hosp. for Chronic Diseases	New York City NPAssn	711	79	8	13	.....	Yes	1	March & Oct.	12	365	73	$25

Numerical references will be found on page 715.

V 10
1936

		Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Autopsies	Autopsy Percentage	Beginning Salary per Month
PATHOLOGY—(Continued)														
New York Hospital	New York City	NPAssn	1,010	8	73	19	.....	Yes	1	Jan.	12	316	57	$25
N.Y.Post-Grad. Med. School and Hosp.	New York City	NPAssn	411	13	3	84	.....	Yes	1	Varies	12	81	26	.....
Presbyterian Hospital	New York City	NPAssn	965	33	42	25	.....	Yes	2	Varies	12	231	45	.....
St. Luke's Hospital	New York City	Church	507	62	..	38	.....	No	2		12	202	47	$100
Willard Parker Hbspital	New York City	City	424	98	2	..	.....	No	1	April & Oct.	12	83	44	$100
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	NP-Cy	645	49	39	12	.....	Yes	4	Jan.	12	382	66	$41.67
Grasslands Hospital	Valhalla, N. Y.	County	922	87	13	..	.....	Yes	2	April & Oct.	24	295	64	$120
Duke Hospital	Durham, N. C.	NPAssn	456	66	24	10	.....	Yes	3	Jan.	36	195	57	$41.67
Cincinnati General Hospital	Cincinnati	City	925	80	13	7	.....	Yes	4	Feb.	12	708	42	.....
Charity Hospital	Cleveland	Church	301	42	3	55	.....	Yes	1	Jan.	12	131	34	.....
City Hospital	Cleveland	City	1,670	100	..	..	.....	Yes	3	Jan.	12	628	38	$40
Mount Sinai Hospital	Cleveland	NPAssn	270	34	12	54	.....	No	1	Dec.	12	57	26	.....
St. Luke's Hospital	Cleveland	Church	392	23	2	75	.....	Yes	2	Dec.	24	92	24	$25
University Hospitals	Cleveland	NPAssn	972	37	14	49	.....	Yes	2	Jan.	12	348	54	$35
Miami Valley Hospital	Dayton, O.	NPAssn	371	33	26	41	.....	No	1	Jan.	12	217	47	$75
State University Hospital and Crippled Children's Hospital	Oklahoma City	State	510	62	32	6	.....	Yes	1	Jan.	12	208	53	$25
St. Vincent's Hospital	Portland, Ore.	Church	416	13	42	45	.....	No	1	Jan.	12	145	42	$25
Univ. of Oregon Med. School Hosps.	Portland	Co-St	405	93	..	7	.....	Yes	1	Jan.	12	409	65	$40
Abington Memorial Hospital	Abington, Pa.	NPAssn	275	30	22	48	.....	Yes	1	March	12	100	48	$100
Graduate Hosp. of the Univ. of Pa.	Philadelphia	NPAssn	475	36	9	55	.....	Yes	1	Jan.	12	100	49	None
Hospital of the Univ. of Pennsylvania	Philadelphia	State	598	36	24	40	.....	Yes	2	Jan.	12	216	67	None
Pennsylvania Hospital	Philadelphia	NPAssn	560	43	32	25	.....	Yes	1	Varies	12	191	50	$41.67
Philadelphia General Hospital	Philadelphia	City	2,400	100	..	..	.....	Yes	2	July	12	1,962	53	$100
Presbyterian Hospital	Philadelphia	Church	425	30	12	58	.....	Yes	1	Varies	12	95	38	$50
Allegheny General Hospital	Pittsburgh	NPAssn	405	59	3	38	.....	No	2	Feb.	12	100	28	$81
Children's Hospital	Pittsburgh	NPAssn	196	70	15	15	.....	Yes	1	Jan.	12	68	37	$35
Mercy Hospital	Pittsburgh	Church	670	35	35	30	.....	Yes	2	Dec.	12	144	32	.....
St. Francis Hospital	Pittsburgh	Church	587	33	9	58	.....	Yes	2	Nov.	12	122	32	$50
Reading Hospital	Reading, Pa.	NPAssn	268	44	2	54	.....	Yes	1	Jan.	12	154	61	$83.33
Rhode Island Hospital	Providence	NPAssn	600	60	15	25	.....	No	1	Varies	12	301	35	$100
John Gaston Hospital	Memphis, Tenn.	City	400	98	..	2	.....	Yes	2	July	12	221	19	$65
Vanderbilt University Hospital	Nashville, Tenn.	NPAssn	210	34	34	32	.....	No	2	March	13	189	61	$35.40
PEDIATRICS														
Children's Hospital	Birmingham, Ala.	NPAssn	50	83	12	5	983	Yes	1	March	12	9	21	.....
California Babies Hospital	Los Angeles	NPAssn	50	45	2	53	453	Yes	1	March	12	7	78	$100
Children's Hospital	Los Angeles	NPAssn	196	59	31	10	3,642	Yes	8	March	12	141	27	$40
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	2,150	Yes	2	Varies	24	2,551	59	$10
White Memorial Hospital	Los Angeles	Church	120	..	25	75	259	Yes	1	April	36	46	32	$65
Children's Hospital of the East Bay	Oakland, Calif.	NPAssn	65	..	65	35	2,180	Yes	2	Feb.	12	20	57	$75
Hospital for Children	San Francisco	NPAssn	250	14	23	63	1,581	Yes	1	Feb.	12	19	23	$25
San Francisco Hospital	San Francisco	CyCo	1,487	100	..	..	1,019	No	2	Nov.	12	555	53	$50
Stanford University Hospitals	San Francisco	NPAssn	324	6	39	55	531	Yes	2	Jan.	12	118	53	$23.75
University of California Hospital	San Francisco	State	293	68	..	32	528	Yes	2	Feb.	12	146	73	$25
Children's Hospital	Denver	NPAssn	135	27	26	47	363	No	5	Dec.	12	53	56	$50
New Haven Hospital	New Haven, Conn.	NPAssn	511	37	37	26	257	Yes	4	Jan. & July	12	252	57	.....
Children's Hospital	Washington, D. C.	NPAssn	185	60	15	25	6,327	Yes	11	Jan. & July	12	132	49	$10
Freedmen's Hospital (col.)	Washington, D. C.	Fed	376	86	..	14	673	Yes	1	June	12	180	49	$51.66
Gallinger Municipal Hospital	Washington, D. C.	City	1,220	100	..	..	1,911	No	4	Jan.	12	497	34	$30
Grady Hospital, Emory University Division (colored unit)	Atlanta, Ga.	City	275	100	..	..	551	Yes	1	Jan.	12	264	30	$25
Henrietta Egleston Hosp. for Children	Atlanta, Ga.	NPAssn	50	51	8	41	981	Yes	2	Jan. & July	12	42	78	$27
University Hospital	Augusta, Ga.	City	200	52	5	43	443	Yes	1	Nov.	12	163	27	$30
Children's Memorial Hospital	Chicago	NPAssn	254	53	..	..	3,493	Yes	16	Varies	12	85	48	None
Cook County Hospital	Chicago	County	3,300	100	..	..	3,917	No	6	June & Dec.	12	1,176	21	None
Michael Reese Hospital	Chicago	NPAssn	626	48	29	23	3,284	Yes	1	Jan. & July	12	279	51	$100
Presbyterian Hospital	Chicago	Church	453	24	47	29	221	Yes	1	Varies	12	160	57	None
Provident Hospital (col.)	Chicago	NPAssn	155	94	6	70	427	Yes	1	Jan.	12	59	39	$40
Research and Educational Hospital	Chicago	State	382	100	..	..	178	Yes	1	Varies	12	197	88	$50
University of Chicago Clinics	Chicago	NPAssn	293	26	69	5	.....	Yes	4	Jan.	12	184	72	None
Indiana University Hospitals	Indianapolis	State	504	90	3	7	1,375	Yes	2	Feb.	12	153	45	$33.33
University Hospitals	Iowa City	State	264	87	8	5	.....	Yes	3	July	12	225	67	$20.83
University of Kansas Hospitals	Kansas City, Kan.	State	250	15	37	48	752	Yes	1	Oct.	12	216	84	$61
Louisville City Hospital	Louisville, Ky.	City	423	90	10	..	1,501	Yes	4	March	36	288	29	$13.91
Charity Hospital	New Orleans	State	1,913	100	..	..	.....	Yes	2	May & June	12	1,347	40	$25
Touro Infirmary	New Orleans	NPAssn	366	31	38	31	338	Yes	1	Jan. to March	12	142	42	$25
Johns Hopkins Hospital	Baltimore	NPAssn	992	53	21	26	1,134	Yes	3	May	12	565	80	$40
Union Memorial Hospital	Baltimore	NPAssn	275	22	48	30	980	Yes	2	Jan.	12	77	37	$12.50
Boston City Hospital	Boston	City	1,732	90	9	1	4,814	Yes	1	Varies	Indef.	809	29	$83.33
Boston Floating Hospital	Boston	NPAssn	50	100	..	..	1,006	Yes	4	March	12	30	86	$10
Children's Hospital	Boston	NPAssn	283	53	..	..	1,999	Yes	2	Varies	12	73	49	.....
Massachusetts General Hospital	Boston	NPAssn	424	47	34	19	387	Yes	1	Varies	12	285	57	$41.67
University Hospital	Ann Arbor, Mich.	State	1,285	79	..	21	2,919	Yes	6	Jan.	12	470	57	$25
Children's Hospital	Detroit	NPAssn	239	77	18	5	7,210	Yes	9	Dec.	12	186	41	$25
Minneapolis General Hospital	Minneapolis	City	687	95	5	..	849	Yes	2	Varies	36	321	59	$25
Wheatley-Provident Hospital (col.)	Kansas City, Mo.	NPAssn	69	20	12	68	150	Yes	1	June	12	10	29	$40
St. Louis Children's Hospital	St. Louis	NPAssn	208	46	41	13	3,363	Yes	9	July	12	103	64	None
St. Louis City Hospital	St. Louis	City	806	100	..	..	1,014	Yes	1	March	12	764	43	$100
St. Mary's Group of Hospitals	St. Louis	Church	551	36	31	33	940	Yes	1	March	36	164	44	$25
Jersey City Hospital	Jersey City, N. J.	City	1,200	94	..	6	847	Yes	1	March & Oct.	12	158	16	None
Cumberland Hospital	Brooklyn	City	318	100	..	..	1,793	No	1	March	12	155	40	$100
Jewish Hospital	Brooklyn	NPAssn	604	30	40	30	708	Yes	4	Dec.	12	238	40	$50
Kings County Hospital	Brooklyn	City	3,160	100	..	..	2,864	Yes	4	June & Nov.	12	939	19	None
Long Island College Hospital	Brooklyn	NPAssn	473	18	34	48	444	Yes	3	Jan.	12	126	34	$22.50
Norwegian Lutheran Deaconesses' Home and Hospital	Brooklyn	Church	198	5	43	52	290	Yes	1	March	12	105	50	.....
Buffalo City Hospital [4]	Buffalo	CyCo	1,063	..	..	..	980	Yes	2	Nov.	..	204	21	.....
Children's Hospital	Buffalo	NPAssn	250	..	56	42	4,963	Yes	2	Jan.	12	95	53	$65
Babies Hospital	New York City	NPAssn	154	41	50	9	3,291	Yes	12	Varies	12	95	61	None
Bellevue Hospital	New York City	City	2,333	100	..	..	2,482	Yes	10	Jan. & July	24	1,344	38	$83.33
Flower-Fifth Avenue Hospital [7]	New York City	NPAssn	347	..	..	..	.....	Yes	..	.....	..	.....	..	.....
Harlem Hospital	New York City	City	325	100	..	..	.....	Yes	1	Varies	12	396	25	None
Metropolitan Hospital	New York City	City	1,425	100	..	..	1,133	Yes	1	Feb.	12	214	19	$100
Mount Sinai Hospital	New York City	NPAssn	780	57	16	27	.....	Yes	2	Varies	12	400	52	$45
New York Foundling Hospital [10]	New York City	Church	418	1	84	15	2,508	Yes	9	Varies	12	36	72	$25
New York Hospital	New York City	NPAssn	1,010	8	73	19	979	Yes	6	Jan.	12	316	57	$25
N.Y. Post-Grad. Med. School and Hosp.	New York City	NPAssn	411	13	3	84	1,285	Yes	1	Varies	24	81	46	.....
St. Luke's Hospital	New York City	Church	507	62	..	38	.....	No	2	.....	12	202	47	.....
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	NP-Cy	645	49	39	12	1,005	Yes	4	Jan.	12	382	66	$41.67

Numerical references will be found on page 715.

	Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Autopsies	Autopsy Percentage	Beginning Salary per Month
PEDIATRICS—(Continued)													
Sea View Hospital	Staten Island, N. Y.	City	1,788	99	1	..	371	Yes	4	May & Nov.	12	244	49	$100
Grasslands Hospital	Valhalla, N. Y.	County	932	87	13	..	.....	Yes	2	April & Oct.	12	295	64	$120
Duke Hospital	Durham, N. C.	NPAssn	456	66	24	10	412	Yes	3	Jan.	36	195	57	$41.67
Children's Hospital	Akron, O.	NPAssn	110	61	..	39	2,855	Yes	1	Jan.	12	54	41	$90
Children's Hospital	Cincinnati	Church	221	62	24	14	4,208	Yes	8	Dec.	24	62	35	$25
Cincinnati General Hospital	Cincinnati	City	925	80	13	7	1,019	Yes	4	Feb.	12	708	42	.....
Charity Hospital	Cleveland	Church	301	42	3	55	154	Yes	1	Jan.	12	131	34	.....
University Hospitals	Cleveland	NPAssn	972	37	14	49	698	Yes	7	Jan.	12	348	54	$25
Children's Hospital	Columbus, O.	NPAssn	100	87	11	2	3,142	Yes	3	Dec.	12	61	59	$65
Univ. of Oregon Med. School Hosps.	Portland	Co-St	405	93	..	7	713	Yes	1	Jan.	12	409	65	$40
Children's Hospital	Philadelphia	NPAssn	116	73	19	8	2,106	Yes	11	Varies	12	77	59	None
Children's Hospital of the Mary J. Drexel Home	Philadelphia	Church	52	15	22	63	857	Yes	1	April	12	7	33	$100
Hospital of the Univ. of Pennsylvania	Philadelphia	State	598	36	24	40	1,087	Yes	1	Jan.	12	216	67	None
Philadelphia General Hospital	Philadelphia	City	2,400	100	..	..	2,146	Yes	1	July	12	1,962	53	$100
St. Christopher's Hosp. for Children	Philadelphia	NPAssn	75	51	19	30	2,243	Yes	4	Feb.	12	16	24	$75
Children's Hospital	Pittsburgh	NPAssn	196	70	15	15	2,779	Yes	5	Jan.	12	68	87	$35
Children's Hospital	Chattanooga, Tenn.	CyCo	74	77	4	19	599	Yes	2	Jan.	12	30	22	$50
John Gaston Hospital	Memphis, Tenn.	City	400	98	..	2	1,487	Yes	1	July	12	221	19	$65
Vanderbilt University Hospital	Nashville, Tenn.	NPAssn	210	34	34	32	878	No	3	March	12	189	61	$35.40
Medical College of Va., Hosp. Division	Richmond	NPAssn	442	7	81	12	1,083	Yes	1	Feb.	12	241	33	$50
University of Virginia Hospital	University	State	311	24	46	30	734	Yes	1	Dec.	12	113	34	$45
Children's Orthopedic Hospital	Seattle	NPAssn	134	59	26	15	1,271	Yes	1	July	12	24	62	$92.50
State of Wisconsin General Hospital	Madison	State	652	88	7	5	.....	Yes	1	March	36	57	70	$25
Milwaukee Children's Hospital	Milwaukee	NPAssn	155	67	17	16	2,964	Yes	7	Jan.	12	89	45	$30
PHYSICAL THERAPY														
Stanford University Hospitals	San Francisco	NPAssn	324	6	39	55	.....	Yes	1	Jan.	12	118	53	$23.75
PLASTIC SURGERY														
Kings County Hospital	Brooklyn	City	3,160	100	..	..	.....	Yes	1	June & Nov.	12	939	19	.....
RADIOLOGY														
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	.....	Yes	8	Varies	24	2,551	59	$10
San Francisco Hospital	San Francisco	CyCo	1,487	100	..	..	.....	No	2	Nov.	12	555	53	$100
Stanford University Hospitals	San Francisco	NPAssn	324	6	39	55	.....	Yes	2	Jan.	12	118	53	$23.75
University of California Hospital	San Francisco	State	293	68	..	32	.....	Yes	2	Feb.	12	146	73	$50
New Haven Hospital	New Haven, Conn.	NPAssn	511	37	37	26	.....	Yes	2	Jan. & July	12	252	57	.....
Garfield Memorial Hospital	Washington, D. C.	NPAssn	311	1	25	74	.....	Yes	1	Dec.	12	85	38	.....
Michael Reese Hospital	Chicago	NPAssn	626	48	29	23	.....	Yes	1	Jan. & July	12	279	51	$25
Research and Educational Hospital	Chicago	State	382	100	..	..	.....	Yes	1	Varies	12	197	88	$50
St. Luke's Hospital [3]	Chicago	NPAssn	630	4	20	76	.....	Yes	2	Jan.	24	128	40	.....
University of Chicago Clinics	Chicago	NPAssn	293	26	69	5	.....	Yes	3	Jan.	12	184	72	None
Methodist Episcopal Hospital	Indianapolis	Church	526	..	25	75	.....	Yes	1	Jan.	12	153	33	.....
University Hospitals	Iowa City	State	954	87	8	5	.....	Yes	3	July	12	325	57	$20.83
Charity Hospital	New Orleans	State	1,913	100	..	..	.....	Yes	1	May & June	12	1,547	40	$25
Touro Infirmary	New Orleans	NPAssn	366	31	38	31	.....	Yes	1	Jan. to March	12	142	46	$25
Johns Hopkins Hospital	Baltimore	NPAssn	902	53	21	26	.....	Yes	1	May	12	505	80	$50
University Hospital	Baltimore	State	450	50	6	44	.....	Yes	1	Jan.	12	183	44	None
Boston City Hospital	Boston	City	1,732	90	9	1	.....	Yes	1	Varies	Indef.	809	29	$83.33
Massachusetts General Hospital	Boston	NPAssn	424	47	34	19	.....	Yes	2	Varies	36	285	57	$41.67
Massachusetts Memorial Hospitals	Boston	NPAssn	346	23	45	32	.....	Yes	1	March	24	64	39	$50
Peter Bent Brigham Hospital	Boston	NPAssn	247	44	29	27	.....	Yes	1	Varies	12	171	61	$41.67
University Hospital	Ann Arbor, Mich.	State	1,285	79	..	21	.....	Yes	2	Jan.	12	470	57	$25
City of Detroit Receiving Hospital	Detroit	City	650	100	..	..	.....	Yes	1	Dec.	12	577	28	$83.33
Hurley Hospital	Flint, Mich.	City	487	..	..	..	.....	Yes	1	July	36	275	45	$100
St. Louis City Hospital	St. Louis	City	806	100	..	..	.....	Yes	2	March	12	764	43	.....
University of Nebraska Hospital [3]	Omaha	State	240	100	..	..	.....	No	1	July	12	107	78	.....
Kings County Hospital	Brooklyn	City	3,160	100	..	..	.....	Yes	2	June & Nov.	12	939	19	$100
Long Island College Hospital	Brooklyn	NPAssn	473	18	34	48	.....	Yes	1	Jan.	12	126	26	$45
Buffalo City Hospital [4]	Buffalo	CyCo	1,063	..	..	..	.....	Yes	2	Nov.	..	204	21	.....
Bellevue Hospital [20]	New York City	City	2,333	100	..	..	.....	Yes	4	Jan. & July	12	1,344	38	.....
Beth Israel Hospital	New York City	NPAssn	444	43	56	1	.....	Yes	2	Varies	12	164	42	None
Lenox Hill Hospital	New York City	NPAssn	295	55	..	45	.....	Yes	1	Varies	12	127	38	None
Montefiore Hosp. for Chronic Dis. [21]	New York City	NPAssn	711	79	8	13	.....	Yes	2	March & Oct.	12	365	73	$50
Mount Sinai Hospital	New York City	NPAssn	780	57	16	27	.....	Yes	3	Varies	12	400	52	None
New York Hospital	New York City	NPAssn	1,010	8	73	19	.....	Yes	1	Jan.	12	316	57	$25
N.Y. Post-Grad. Med. School and Hosp.	New York City	NPAssn	411	3	84	13	.....	Yes	1	Varies	12	61	46	.....
Presbyterian Hospital	New York City	NPAssn	965	33	42	25	.....	Yes	3	Varies	12	231	45	$41.67
St. Luke's Hospital	New York City	Church	507	62	..	38	.....	No	2	Jan. & July	12	302	47	.....
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	NP-Cy	645	49	39	12	.....	Yes	2	Jan.	12	382	66	$41.67
Sea View Hospital	Staten Island, N. Y.	City	1,788	99	1	..	.....	No	1	May & Nov.	12	244	49	$100
Duke Hospital	Durham, N. C.	NPAssn	456	66	24	10	.....	Yes	3	Jan.	12	195	57	$41.67
Cincinnati General Hospital	Cincinnati	City	925	80	13	7	.....	Yes	2	Feb.	12	708	42	.....
Jewish Hospital	Cincinnati	NPAssn	262	19	43	38	.....	Yes	1	Dec.	12	61	31	$50
City Hospital	Cleveland	City	1,670	100	..	..	.....	Yes	2	Jan.	12	628	38	$27
University Hospitals	Cleveland	NPAssn	972	37	14	14	.....	Yes	1	Jan.	12	348	54	$25
State University Hospital and Crippled Children's Hospital	Oklahoma City	State	510	62	32	6	.....	Yes	1	Jan.	12	208	53	$25
Univ. of Oregon Med. School Hosps.	Portland	Co-St	405	93	..	7	.....	Yes	1	Jan.	12	409	65	$40
Hospital of the Univ. of Pennsylvania	Philadelphia	State	598	36	24	40	.....	Yes	1	Jan.	12	216	67	None
Pennsylvania Hospital	Philadelphia	NPAssn	560	43	32	25	.....	Yes	1	Varies	12	191	50	$50
Philadelphia General Hospital	Philadelphia	City	2,400	100	..	..	.....	Yes	1	July	12	1,962	53	$100
Roper Hospital	Charleston, S. C.	NPAssn	300	63	4	33	.....	Yes	1	Jan.	12	152	28	$40
John Sealy Hospital	Galveston, Tex.	City	374	70	5	25	.....	Yes	1	Jan.	12	209	37	$60
Medical College of Va., Hosp. Division	Richmond	NPAssn	442	7	81	12	.....	Yes	1	Feb.	12	241	33	$50
University of Virginia Hospital	University	State	311	24	46	30	.....	Yes	2	Dec.	12	113	34	None
State of Wisconsin General Hospital	Madison	State	652	88	7	5	.....	Yes	2	March	36	257	70	$25
SURGERY														
Hillman Hospital	Birmingham, Ala.	County	474	100	..	..	1,859	Yes	2	Jan.	12	241	26	$40
Employees' Hospital of the Tennessee Coal, Iron and Railroad Co.	Fairfield, Ala.	NPAssn	310	..	..	100	1,486	Yes	1	Jan.	12	108	45	$100
Fresno County General Hospital	Fresno, Calif.	County	520	98	2	..	1,685	Yes	2	Jan.	24	245	39	$80
Cedars of Lebanon Hospital	Los Angeles	NPAssn	288	22	3	75	1,674	No	1	Dec.	12	101	40	$75
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	4,115	Yes	6	Varies	36	2,551	59	$10
White Memorial Hospital	Los Angeles	Church	120	..	25	75	1,580	Yes	1	April	36	46	32	$86.75
Alameda County Hospital	Oakland, Calif.	County	372	100	..	..	3,524	No	4	Dec.	12	852	40	$40
San Bernardino County Charity Hosp.	San Bernardino, Calif.	County	324	100	..	..	618	Yes	1	April	12	132	42	$75
San Diego County General Hospital	San Diego, Calif.	County	663	100	..	..	1,594	Yes	1	April	12	276	42	$75
Hospital for Children	San Francisco	NPAssn	259	14	23	63	527	Yes	1	Feb.	12	19	23	$25

Numerical references will be found on page 715.

V 107
1936

			Capacity	Classification of Patients — Percentage			Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Autopsies	Autopsy Percentage	Beginning Salary per Month
		Control		Free	Part Pay	Full Pay								
SURGERY—(Continued)														
Mary's Help Hospital	San Francisco	Church	145	11	23	66	1,353	Yes	1	Feb.	12	55	43	.....
Mount Zion Hospital	San Francisco	NPAssn	189	18	13	69	1,687	Yes	1	Feb.	12	82	48	$50
San Francisco Hospital	San Francisco	CyCo	1,487	100	..	..	2,633	No	5	Nov.	12	555	53	$50
Stanford University Hospitals	San Francisco	NPAssn	224	6	39	55	1,459	Yes	4	Jan.	12	118	53	$229.75
University of California Hospital	San Francisco	State	293	68	..	32	1,484	Yes	7	Feb.	12	146	73	$50
Santa Clara County Hospital	San Jose, Calif.	County	493	98	2	..	.....	Yes	1	Jan.	12	210	39	.....
Colorado General Hospital	Denver	State	178	90	10	..	1,961	No	1	Jan.	12	175	81	.....
New Haven Hospital	New Haven, Conn.	NPAssn	511	37	37	26	2,632	Yes	6	Jan. & July	12	252	57	.....
Central Disp. and Emergency Hospital	Washington, D. C.	NPAssn	270	18	14	68	5,387	Yes	4	March	12	170	49	$50
Freedmen's Hospital (col.)	Washington, D. C.	Fed	376	86	..	14	1,524	Yes	1	June	12	180	49	$51.66
Gallinger Municipal Hospital	Washington, D. C.	City	1,220	100	..	..	2,216	No	4	Jan.	12	497	34	$30
Garfield Memorial Hospital	Washington, D. C.	NPAssn	311	1	25	74	.....	Yes	1	Dec.	12	85	38	$125
Grady Hospital	Atlanta, Ga.	City	325	100	..	..	3,007	Yes	1	Jan.	12	264	20	$50
Grady Hospital, Emory University Division (colored unit)	Atlanta, Ga.	City	275	100	..	..	2,880	Yes	4	Jan.	12	264	20	$30
University Hospital	Augusta, Ga.	City	300	32	5	63	2,863	Yes	3	Nov.	12	163	27	$50
Augustana Hospital	Chicago	Church	350	12	36	52	2,713	Yes	1	Oct.	12	46	26	.....
Passavant Memorial Hospital	Chicago	NPAssn	165	5	1	94	1,081	Yes	3	Jan. & July	13	45	60	None
Presbyterian Hospital	Chicago	Church	453	24	47	29	2,160	Yes	2	Varies	24	160	57	$50
Provident Hospital (col.)	Chicago	NPAssn	155	18	6	76	1,176	Yes	1	Jan.	12	59	39	$50
Research and Educational Hospital	Chicago	State	382	100	..	..	1,967	Yes	3	Varies	36	107	88	$50
St. Luke's Hospital [3]	Chicago	NPAssn	659	4	20	76	4,079	Yes	4	Jan.	12	128	40	None
University of Chicago Clinics	Chicago	NPAssn	293	26	69	5	.....	Yes	4	Jan.	12	184	72	None
Wesley Memorial Hospital	Chicago	Church	268	34	16	50	1,444	Yes	1	Jan.	12	67	68	.....
Evanston Hospital	Evanston, Ill.	Church	250	15	38	47	2,286	Yes	1	April	12	95	66	$83.33
Indianapolis City Hospital	Indianapolis	City	577	92	4	4	1,546	Yes	4	April	12	414	41	$20.83
Indiana University Hospitals	Indianapolis	State	504	90	3	7	1,462	Yes	2	Feb.	12	153	45	$33.33
University Hospitals	Iowa City	State	964	87	8	5	.....	Yes	9	July	12	325	57	$20.83
University of Kansas Hospitals	Kansas City, Kan.	State	250	15	37	48	1,174	Yes	2	Oct.	36	216	84	$61
Louisville City Hospital	Louisville, Ky.	City	423	90	10	..	5,105	Yes	10	March	36	288	29	$91.91
Charity Hospital	New Orleans	State	1,913	100	..	..	14,946	Yes	5	May & June	12	1,347	40	$25
Touro Infirmary	New Orleans	NPAssn	366	31	38	31	2,536	Yes	1	Jan. to March	12	142	46	$75
Baltimore City Hospitals (General)	Baltimore	City	963	100	..	..	2,792	No	5	Jan.	12	440	41	$12.50
Bon Secours Hospital	Baltimore	Church	143	33	23	44	.....	Yes	2	Dec.	12	54	73	$50
Church Home and Infirmary	Baltimore	Church	184	21	53	26	1,867	Yes	3	Dec.	12	44	46	$20
Johns Hopkins Hospital	Baltimore	NPAssn	902	53	21	26	1,863	Yes	7	May	12	505	80	$50
Maryland General Hospital	Baltimore	Church	238	42	9	49	2,077	....	3	Jan.	12	44	18	$35
Mercy Hospital	Baltimore	Church	300	53	11	36	1,812	No	5	Jan.	12	86	38	$50
Provident Hosp. and Free Disp. (col.)	Baltimore	NPAssn	132	83	4	13	1,139	No	1	Oct.	12	36	17	$41.66
St. Agnes' Hospital	Baltimore	Church	205	38	34	28	653	Yes	3	Nov.	12	53	26	.....
St. Joseph's Hospital	Baltimore	Church	285	41	12	47	1,215	Yes	4	Jan.	12	70	30	None
Sinai Hospital	Baltimore	NPAssn	269	41	24	34	1,774	Yes	1	Jan.	12	58	27	$47.50
South Baltimore General Hospital	Baltimore	NPAssn	125	31	42	27	1,107	Yes	1	Dec.	12	46	34	$50
Union Memorial Hospital	Baltimore	NPAssn	275	22	48	30	3,481	Yes	6	Jan.	12	77	37	$12.50
University Hospital	Baltimore	State	450	50	6	44	2,147	Yes	5	Jan.	12	183	44	None
West Baltimore General Hospital	Baltimore	Corp	300	35	5	65	1,966	Yes	3	Jan.	12	22	21	$30
Beth Israel Hospital	Boston	NPAssn	215	18	32	50	1,815	No	2	Varies	12	102	51	.....
Boston City Hospital	Boston	City	1,732	50	9	1	12,786	Yes	10	Jan.	12	809	29	Varies
Children's Hospital	Boston	NPAssn	283	2	58	40	1,516	Yes	1	Varies	12	73	49	$56.50
Massachusetts General Hospital	Boston	NPAssn	424	47	34	19	4,298	Yes	4	Varies	12	285	57	$41.67
Massachusetts Memorial Hospitals	Boston	NPAssn	346	33	45	32	2,931	Yes	1	March	12	64	39	$61
Peter Bent Brigham Hospital	Boston	NPAssn	247	44	29	27	2,466	Yes	5	Varies	16	171	61	$41.67
Truesdale Hospital	Fall River, Mass.	NPAssn	150	14	43	43	1,047	Yes	2	Jan. & June	12	51	47	None
Memorial Hospital	Worcester, Mass.	NPAssn	215	17	7	76	1,769	No	1	Jan.	12	62	38	$100
University Hospital	Ann Arbor, Mich.	State	1,285	79	..	21	5,262	Yes	12	Jan.	12	470	57	$25
City of Detroit Receiving Hospital	Detroit	City	650	100	..	..	4,581	Yes	2	Dec.	24	577	28	$25
Grace Hospital	Detroit	NPAssn	538	31	42	27	4,214	Yes	1	Feb.	12	130	18	$50
Harper Hospital	Detroit	NPAssn	725	10	..	90	7,875	Yes	5	Jan.	12	108	22	$25
Henry Ford Hospital	Detroit	NPAssn	608	34	..	66	.....	Yes	11	Jan.	12	226	41	$110
Jefferson Clinic Hospital	Detroit	NPAssn	60	5	15	80	.....	Yes	1	Feb.	24	8	19	$50
Providence Hospital	Detroit	Church	406	21	67	12	5,150	No	1	Jan.	12	144	32	$100
Eloise Hospital (Dr. William J. Seymour Hospital)	Eloise, Mich.	County	1,368	100	..	..	.....	Yes	6	March	12	551	44	$37
Hurley Hospital	Flint, Mich.	City	487	....	..	..	.....	Yes	1	July	12	275	45	$100
Minneapolis General Hospital [1]	Minneapolis	City	687	95	5	..	2,194	Yes	7	Varies	36	331	39	$25
Ancker Hospital	St. Paul	CyCo	900	100	..	..	1,724	Yes	2	March	24	516	65	$50
St. Mary's Hospital	Kansas City, Mo.	Church	175	21	18	61	1,486	....	1	Jan.	12	126	67	$50
Barnard Free Skin and Cancer Hosp.	St. Louis	NPAssn	44	100	..	..	483	Yes	1	Jan.	12	11	34	$25
Barnes Hospital	St. Louis	Church	300	16	4	80	4,509	No	7	Dec.	24	170	57	$25
Jewish Hospital	St. Louis	NPAssn	250	29	52	19	1,269	No	2	Dec.	12	56	31	$40
St. Louis City Hospital	St. Louis	City	806	100	..	..	2,017	Yes	7	March	12	764	43	$75
St. Louis City Hospital No. 2 (col.)	St. Louis	City	325	100	..	..	4,966	Yes	1	June	12	132	16	$100
St. Luke's Hospital	St. Louis	Church	210	14	31	55	756	Yes	2	Dec.	12	42	25	$50
St. Mary's Group of Hospitals [4]	St. Louis	Church	551	36	31	33	2,181	Yes	5	March	36	164	44	$25
Jersey City Hospital	Jersey City, N. J.	City	1,200	94	..	6	4,113	Yes	3	March & Oct.	12	158	16	$100
Burlington County Hospital	Mount Holly, N. J.	NPAssn	141	27	27	46	1,451	Yes	1	April	12	49	33	$50
Albany Hospital [4]	Albany, N. Y.	NPAssn	610	8	75	17	606	Yes	4	Dec.	12	353	73	$15
Cumberland Hospital	Brooklyn	City	318	100	..	..	3,275	No	2	March	12	155	40	$15
Kings County Hospital	Brooklyn	City	3,160	100	..	..	13,866	Yes	6	June & Nov.	12	939	19	$100
Long Island College Hospital	Brooklyn	NPAssn	473	18	34	48	2,226	Yes	4	Jan.	12	196	34	$22.50
Norwegian Lutheran Deaconesses' Home and Hospital	Brooklyn	Church	198	5	43	52	1,720	Yes	1	March	12	105	50	.....
Buffalo City Hospital [4]	Buffalo	CyCo	1,063	....	..	..	2,688	Yes	2	Nov.	..	204	21	.....
Buffalo General Hospital	Buffalo	NPAssn	465	13	36	51	2,894	Yes	5	Dec.	12	194	36	$25
Millard Fillmore Hospital	Buffalo	NPAssn	309	21	34	45	2,964	Yes	2	Dec.	12	119	46	$30
Clifton Springs Sanitarium and Clinic	Clifton Springs, N. Y.	NPAssn	482	10	40	50	657	No	1	Varies	12	35	56	$25
Charles S. Wilson Memorial Hospital	Johnson City, N. Y.	NPAssn	350	1	3	96	2,073	Yes	1	Dec.	12	85	51	$75
Bellevue Hospital	New York City	City	2,333	100	..	..	10,841	Yes	2	Jan. & July	12	1,344	38	$83.33
Flower-Fifth Avenue Hospital [4]	New York City	NPAssn	347	....	..	..	.....	....	..	....	..	....	..	.....
Metropolitan Hospital	New York City	City	1,425	100	..	..	2,038	Yes	2	Feb.	12	214	19	$100
Montefiore Hosp. for Chronic Diseases	New York City	NPAssn	711	79	8	13	255	Yes	3	March & Oct.	12	365	73	$30
Mount Sinai Hospital	New York City	NPAssn	780	57	16	27	.....	Yes	6	Varies	12	400	52	$120
New York Hospital	New York City	NPAssn	1,010	8	73	19	2,714	Yes	12	Jan.	12	316	57	$25
N.Y. Polyclinic Med. School and Hosp.	New York City	NPAssn	346	17	70	13	1,951	....	8	Varies	24	43	23	None
N.Y. Post-Grad. Med. School and Hosp.	New York City	NPAssn	411	13	3	84	2,989	Yes	1	Varies	12	81	26	.....
New York Society for the Relief of the Ruptured and Crippled	New York City	NPAssn	256	11	..	89	1,443	Yes	1	Varies	12	17	50	$80
Presbyterian Hospital	New York City	NPAssn	965	33	42	25	5,197	Yes	12	Varies	12	231	45	$83.34
Genesee Hospital	Rochester, N. Y.	NPAssn	220	29	28	43	1,998	No	1	Jan.	12	74	29	$50
Rochester General Hospital	Rochester, N. Y.	NPAssn	365	24	9	67	3,304	No	1	April	12	209	65	$50
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	NP-Cy	645	49	39	12	5,079	Yes	5	Jan.	12	382	66	$41.67

Numerical references will be found on page 715.

	Control	Capacity	Classification of Patients Percentage Free	Part Pay	Full Pay	Patients Treated in Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Autopsies	Autopsy Percentage	Beginning Salary per Month
SURGERY—Continued													
Hospital of the Good Shepherd	Syracuse, N. Y.	NPAssn	242	2	45	53	.....	No	2	Dec.	12	96	40	$39.50
Grasslands Hospital	Valhalla, N. Y.	County	932	87	13	..	1,596	Yes	3	April & Oct.	12	295	64	$120
Duke Hospital	Durham, N. C.	NPAssn	456	66	24	10	1,554	Yes	6	Jan.	36	195	57	$41.67
Watts Hospital	Durham, N. C.	NPAssn	225	32	33	35	2,160	Yes	1	Jan.	12	62	28	$50
City Memorial Hospital	Winston-Salem, N. C.	City	191	43	9	48	1,060	Yes	2	Jan.	12	44	23	$50
City Hospital	Akron, O.	NPAssn	350	43	7	50	4,192	Yes	3	Feb.	12	191	52	$75
St. Thomas Hospital	Akron, O.	Church	185	31	33	36	936	No	1	Dec.	12	79	36	$40
Mercy Hospital	Canton, O.	Church	214	26	59	15	2,716	Yes	1	Dec.	12	80	30	$100
Cincinnati General Hospital	Cincinnati	City	925	80	13	7	2,536	Yes	15	Feb.	12	708	42	.....
Deaconess Hospital	Cincinnati	Church	175	5	40	55	859	Yes	1	Dec.	12	58	25	.....
Good Samaritan Hospital	Cincinnati	Church	535	20	52	28	5,381	Yes	3	Jan.	36	81	16	$50
Jewish Hospital	Cincinnati	NPAssn	202	19	43	38	2,230	Yes	2	Dec.	12	61	31	$50
Charity Hospital	Cleveland	Church	301	42	3	55	2,810	Yes	1	Jan.	12	131	34	.....
City Hospital	Cleveland	City	1,670	100	..	..	3,185	Yes	6	Jan.	18	628	38	$25
Mount Sinai Hospital	Cleveland	NPAssn	270	34	12	54	2,109	No	2	Dec.	12	57	26	$60
St. Alexis Hospital	Cleveland	Church	220	35	..	61	2,742	No	2	Dec.	12	84	38	$50
St. John's Hospital	Cleveland	Church	210	12	10	78	1,796	No	2	Dec.	12	78	32	$25
St. Luke's Hospital	Cleveland	Church	392	23	2	75	2,223	Yes	4	Dec.	48	92	24	$25
University Hospitals	Cleveland	NPAssn	972	37	14	49	3,711	Yes	7	Jan.	12	348	54	$35
Starling-Loving University Hospital	Columbus, O.	State	276	46	19	35	1,432	Yes	5	Dec.	12	157	41	$25
Miami Valley Hospital	Dayton, O.	NPAssn	371	26	41	33	2,460	No	1	Jan.	12	217	47	$75
St. Elizabeth's Hospital	Youngstown, O.	Church	261	2	20	78	2,317	No	1	Dec.	12	85	24	$50
St. Anthony Hospital	Oklahoma City	Church	340	11	54	35	3,274	Yes	2	Jan.	12	108	33	.....
State University Hospital and Crippled Children's Hospital	Oklahoma City	State	510	62	32	6	2,064	Yes	3	Jan.	12	208	53	Varies
Univ. of Oregon Med. School Hosps.	Portland	County	405	93	..	7	1,008	Yes	2	Jan.	24	409	65	$30
Abington Memorial Hospital	Abington, Pa.	NPAssn	275	30	22	48	1,584	Yes	1	March	12	106	48	None
Geo. F. Geisinger Memorial Hospital	Danville, Pa.	NPAssn	198	25	31	44	1,441	Yes	1	Jan.	12	58	30	$50
Germantown Dispensary and Hospital	Philadelphia	NPAssn	155	21	29	50	1,405	Yes	1	Jan.	12	84	26	$110
Graduate Hospital of the Univ. of Pa.	Philadelphia	NPAssn	475	36	9	55	1,241	Yes	2	Jan.	12	100	40	None
Jewish Hospital	Philadelphia	NPAssn	426	34	12	54	2,461	No	2	March	12	174	52	None
Pennsylvania Hospital	Philadelphia	NPAssn	560	43	32	25	397	Yes	1	Varies	12	191	50	$25
Philadelphia General Hospital	Philadelphia	City	2,400	100	..	..	8,425	Yes	1	July	12	1,982	53	$100
Allegheny General Hospital	Pittsburgh	NPAssn	405	59	3	38	2,400	No	1	Feb.	12	100	28	$81
St. Francis Hospital	Pittsburgh	Church	587	29	13	58	1,861	Yes	1	Nov.	12	122	32	$50
Reading Hospital	Reading, Pa.	NPAssn	268	44	2	54	1,662	Yes	1	Jan.	12	154	61	$83.33
Roper Hospital	Charleston, S. C.	NPAssn	300	63	4	33	1,232	Yes	1	Jan.	12	152	28	$40
Baroness Erlanger Hospital	Chattanooga, Tenn.	CyCo	246	67	1	32	2,381	Yes	1	Dec.	12	116	26	$150
John Gaston Hospital	Memphis, Tenn.	City	400	98	..	2	2,176	Yes	2	July	12	221	19	$65
Nashville General Hospital	Nashville, Tenn.	City	305	84	..	16	1,488	Yes	2	Dec.	12	157	35	$75
Vanderbilt University Hospital	Nashville, Tenn.	NPAssn	210	34	34	32	1,954	No	4	March	12	189	61	$35.40
Baylor University Hospital	Dallas, Tex.	Church	380	39	20	60	2,474	Yes	1	April	12	95	30	$75
John Sealy Hospital	Galveston, Tex.	City	374	70	5	25	1,298	Yes	1	Jan.	12	209	57	None
Norfolk General Hospital	Norfolk, Va.	Church	200	24	26	50	2,628	Yes	1	Jan.	12	26	18	$50
Medical College of Va., Hosp. Division	Richmond	NPAssn	442	7	81	12	3,555	Yes	7	Feb.	12	241	33	$25
University of Virginia Hospital	University	State	311	24	46	30	1,310	Yes	2	Dec.	12	113	34	$22.50
Charleston General Hospital	Charleston, W. Va.	Corp	200	3	6	91	3,554	Yes	2	Jan.	12	48	24	$25
State of Wisconsin General Hospital	Madison	State	652	88	7	5	.....	Yes	3	March	36	257	70	$25
THORACIC SURGERY														
San Francisco Hospital	San Francisco	CyCo	1,487	100	..	..	.....	No	1	Nov.	12	555	53	$50
Norwich State Tuberculosis Sanatorium (Uncas-on-Thames)	Norwich, Conn.	State	404	...	100	..	265	Yes	1	Varies	12	32	41	$144
Sea View Hospital	Staten Island, N. Y.	City	1,788	99	1	..	304	No	3	May & Nov.	12	244	49	$100
City Hospital	Cleveland	City	1,670	100	..	..	.....	Yes	1	Jan.	12	628	38	$75
TROPICAL DISEASES														
Boston City Hospital	Boston	City	1,732	90	9	1	61	Yes	1	Varies	Indef.	802	29	None
University Hospital of the School of Tropical Medicine	San Juan, P. R.	Gov't	48	72	15	13	558	Yes	2	May	Indef.	20	57	$175
TUBERCULOSIS														
Arroyo Sanatorium	Livermore, Calif.	County	187	100	..	..	421	Yes	1	Jan.	24	7	35	$125
Barlow Sanatorium	Los Angeles	NPAssn	100	6	94	..	183	Yes	1	Varies	12	1	100	$100
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	1,316	Yes	2	Varies	Indef.	2,551	59	$175
Pottenger Sanatorium and Clinic	Monrovia, Calif.	Corp	120	..	70	30	178	Yes	1	Varies	Indef.	*	..	$50
San Francisco Hospital	San Francisco	CyCo	1,487	100	..	..	785	No	1	Nov.	12	555	53	$50
Santa Clara County Hospital	San Jose, Calif.	County	493	98	2	..	.....	Yes	3	Jan.	12	210	39	.....
Fairmont Hospital of Alameda County	San Leandro, Calif.	County	900	100	..	..	685	No	1	Dec.	12	202	45	$100
Union Printers' Home and Tuberculosis Sanatorium	Colorado Springs	NPAssn	194	100	..	..	250	No	3	Varies	Indef.	12	21	$125
National Jewish Hospital	Denver	NPAssn	250	100	..	..	623	Yes	4	Varies	12	11	38	$100
Sanatorium of the Jewish Consumptives' Relief Society	Spivak, Colo.	NPAssn	300	100	..	..	369	Yes	5	Varies	Indef.	3	15	$100
Undercliff, Meriden State Tuberculosis Sanatorium	Meriden, Conn.	State	252	85	15	..	377	Yes	3	Varies	Indef.	2	22	$100
Norwich State Tuberculosis Sanatorium (Uncas-on-Thames)	Norwich, Conn.	State	404	...	100	..	725	Yes	1	Varies	Indef.	32	41	$144
City of Chicago Municipal Tuberculosis Sanitarium	Chicago	City	1,206	100	..	..	3,192	No	1	Varies	Indef.	113	41	$175
Macon County Tuberculosis Sanat.	Decatur, Ill.	County	80	75	..	25	132	No	1	July	12	5	100	$100
Peoria Municipal Tuberculosis Sanat.	Peoria, Ill.	City	93	100	..	..	192	Yes	1	Varies	Indef.	9	64	$125
Rockford Municipal Tuberculosis Sanatorium	Rockford, Ill.	City	126	100	..	..	186	No	1	Varies	12	*	..	$100
Boehne Tuberculosis Hospital	Evansville, Ind.	County	129	30	37	33	788	Yes	1	Varies	12	29	100	$150
Indiana State Sanatorium	Rockville, Ind.	State	211	100	..	..	386	Yes	1	Varies	36	*	..	$50
Western Maine Sanatorium	Greenwood Mountain	State	150	81	19	..	309	Yes	2	Varies	12	9	47	.....
Baltimore City Hosp. (Tuberculosis)	Baltimore	City	179	100	..	..	591	No	2	Jan.	12	88	42	$16.67
Rutland State Sanatorium	Rutland, Mass.	State	370	73	..	27	755	Yes	1	Varies	12	26	42	$75
Plymouth County Hospital	South Hanson, Mass.	County	140	100	..	..	200	Yes	1	Varies	12	28	78	$100
Middlesex County Sanatorium	Waltham, Mass.	County	238	100	..	..	437	Yes	2	Varies	12	14	32	$100
Belmont Hospital	Worcester, Mass.	City	275	71	29	..	457	Yes	3	Varies	12	25	56	$133.33
University Hospital	Ann Arbor, Mich.	State	1,285	79	..	21	.....	Yes	1	Jan.	12	470	57	$25
American Legion Hospital	Battle Creek, Mich.	State	375	98	2	..	325	No	2	Varies	Indef.	7	19	$150
Herman Kiefer Hospital	Detroit	City	1,400	98	2	..	2,205	No	16	Jan.	Indef.	151	23	.....
Michigan State Sanatorium	Howell	State	480	100	..	..	729	Yes	2	Varies	Indef.	12	60	$125
Jackson County Sanatorium	Jackson, Mich.	County	64	93	4	3	98	Yes	1	June	12	4	50	$25
Morgan Heights Sanatorium	Marquette, Mich.	County	92	99	..	1	163	Yes	1	July	12	5	42	$125
Wm. H. Maybury Sanatorium	Northville, Mich.	City	840	100	..	..	1,387	.....	5	Varies	Indef.	15	30	.....
Nopeming Sanatorium	Nopeming, Minn.	County	230	96	3	1	446	Yes	2	Jan. & July	12	16	55	$100
Glen Lake Sanatorium [28]	Oak Terrace, Minn.	County	767	88	8	4	1,241	Yes	1	March	12	70	68	$10
City Isolation Hospital	St. Louis	City	250	95	3	2	201	No	1	April	12	52	28	$150
Mount St. Rose Sanatorium	St. Louis	Church	135	51	43	6	359	....	1	March	12	24	62	$125

Numerical references will be found on page 715.

V 107
1936

		Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Appointment in Months	Number of Applicants Accepted Percentage	Beginning Salary per Month
TUBERCULOSIS—(Continued)													
Robert Koch Hospital	St. Louis	City	509	100	..	..	801	No	7	March	12	42 44	$150
New Jersey Sanatorium	Glen Gardner	State	494	100	..	..	813	Yes	4	Varies	Indef.	1 33	$83.33
Jersey City Hospital	Jersey City, N. J.	City	1,200	94	..	6	470	Yes	2	March & Oct.	12	158 16	$50
Hudson County Tuberculosis Hospital and Sanatorium	Secaucus, N. J.	County	207	100	..	..	495	Yes	3	Jan.	12	19 26	.....
U. S. Marine Hospital	Ft. Stanton, N. M.	USPHS	270	100	..	..	320	No	2	Varies	Indef.	7 70	.....
Albany Hospital	Albany, N. Y.	NPAssn	610	8	75	17	270	Yes	2	Dec.	12	353 72	$50
Montefiore Hosp. Country Sanatorium	Bedford Hills, N. Y.	NPAssn	230	96	4	..	478	No	3	Jan. & July	12	* ..	$100
Kings County Hospital	Brooklyn	City	3,160	100	..	..	1,703	Yes	2	June & Nov.	12	939 19	$100
Metropolitan Life Insurance Co. Sanat.	Mt. McGregor, N. Y.	NPAssn	360	100	..	..	202	....	1	Varies	Indef.	6 75	$100
Bellevue Hospital	New York City	City	2,333	100	..	..	2,600	Yes	9	Jan. & July	12	1,344 38	$70
Lenox Hill Hospital	New York City	NPAssn	505	55	..	45	205	Yes	1	Varies	12	127 38	$41.67
Metropolitan Hospital	New York City	City	1,425	100	..	..	608	Yes	5	Feb.	12	214 19	$75
Montefiore Hosp. for Chronic Diseases	New York City	NPAssn	711	79	8	13	517	Yes	3	March & Oct.	12	365 73	$50
Municipal Sanatorium	Otisville, N. Y.	City	388	99	1	..	953	Yes	7	Jan. & July	12	* ..	$120
Iola-Monroe County Tuberculosis Sanatorium	Rochester, N. Y.	County	400	93	3	4	903	Yes	3	Varies	12	50 56	$100
Sea View Hospital	Staten Island, N. Y.	City	1,788	99	1	..	3,067	No	18	May & Nov.	12	244 49	$100
Trudeau Sanatorium	Trudeau, N. Y.	NPAssn	185	2	6	92	428	No	2	Varies	Indef.	3 30	None
Grasslands Hospital	Valhalla, N. Y.	County	932	87	13	..	668	Yes	4	April & Oct.	12	295 64	$50
North Carolina Sanatorium for the Treatment of Tuberculosis	Sanatorium	State	480	40	57	3	1,043	Yes	3	Varies	Indef.	6 33	$120
City Hospital	Cleveland	City	1,670	100	..	..	688	Yes	1	Jan.	12	628 38	$46.50
Ohio State Sanatorium	Mt. Vernon	State	240	....	100	..	683	Yes	2	Varies	24	* ..	$140
Sunny Acres, Cleveland Tuberculosis Sanatorium	Warrensville, O.	City	431	100	..	..	928	Yes	6	April & Oct.	12	8 22	$125
Eagleville Sanat. for Consumptives	Eagleville, Pa.	NPAssn	188	39	24	37	357	No	2	Varies	Indef.	* ..	$125
Philadelphia General Hospital	Philadelphia	City	2,400	100	..	..	1,900	Yes	1	July	12	1,962 53	$100
White Haven Sanatorium	White Haven, Pa.	NPAssn	250	2	..	98	623	No	1	Varies	16	52 75	$75
State Sanatorium	Wallum Lake, R. I.	State	430	100	..	..	.....	Yes	1	July	12	53 62	$50
Pine Breeze Sanatorium	Chattanooga, Tenn.	NPAssn	225	93	6	1	395	Yes	1	Varies	Indef.	8 16	$120
St. Joseph's Sanatorium	El Paso, Tex.	Church	75	3	8	89	175	No	1	June	12	7 78	$100
Hopemont Sanitarium	Hopemont, W. Va.	State	400	....	100	..	690	Yes	4	July	12	28 51	$165
Wisconsin State Sanatorium	Statesan	State	240	98	1	1	293	Yes	3	Varies	Indef.	6 26	$155
UROLOGY													
Hillman Hospital [23]	Birmingham, Ala.	County	474	100	..	..	766	Yes	2	Jan.	12	241 26	$30
Los Angeles County Hospital	Los Angeles	County	3,410	100	..	..	2,598	Yes	4	Varies	36	2,551 59	$10
San Francisco Hospital	San Francisco	CyCo	1,487	100	..	..	613	No	1	Nov.	12	555 53	None
Stanford University Hospitals	San Francisco	NPAssn	324	9	36	55	427	Yes	1	Jan.	12	118 53	$23.75
University of California Hospital	San Francisco	State	293	68	..	32	530	Yes	1	Feb.	12	146 73	$30
New Haven Hospital	New Haven, Conn.	NPAssn	511	37	37	26	.....	Yes	1	Jan. & July	12	252 57	.....
Gallinger Municipal Hospital	Washington, D. C.	City	1,220	100	..	..	274	No	1	Jan.	12	497 34	$50
Grady Hospital, Emory University Division (colored unit)	Atlanta, Ga.	City	275	100	..	..	172	Yes	1	Jan.	12	264 20	.....
University of Chicago Clinics	Chicago	NPAssn	293	26	69	5	.....	Yes	1	Jan.	12	184 72	None
Indianapolis City Hospital	Indianapolis	City	577	92	4	4	312	Yes	1	April	12	414 41	$30.83
University Hospitals	Iowa City	State	954	87	8	5	.....	Yes	3	July	12	325 57	$30.83
Charity Hospital	New Orleans	State	1,913	100	4	..	4,337	Yes	2	May & June	12	1,347 40	$25
Touro Infirmary	New Orleans	NPAssn	366	31	38	31	.....	Yes	1	Jan. to March	12	142 46	$25
Johns Hopkins Hospital	Baltimore	NPAssn	902	53	21	26	666	Yes	3	May	12	505 80	$50
Beth Israel Hospital	Boston	NPAssn	215	18	32	50	245	No	1	Varies	12	102 51	.....
Massachusetts General Hospital	Boston	NPAssn	424	47	34	19	326	Yes	2	Varies	24	285 57	$41.67
Battle Creek Sanitarium	Battle Creek, Mich.	NPAssn	500	..	33	67	271	No	1	Feb.	12	7 22	$100
City of Detroit Receiving Hospital [23]	Detroit	City	650	100	..	..	766	Yes	2	Dec.	12	577 28	$83.33
Eloise Hospital (Dr. William J. Seymour Hospital)	Eloise, Mich.	County	1,368	100	..	..	.....	Yes	2	March	12	551 40	$37
Ancker Hospital	St. Paul	CyCo	900	100	..	..	512	Yes	1	March	12	516 65	$50
St. Louis City Hospital	St. Louis	City	806	100	..	..	809	Yes	1	March	12	764 43	.....
Bayonne Hospital and Dispensary [24]	Bayonne, N. J.	NPAssn	225	80	2	18	344	Yes	1	Varies	12	82 51	None
Jersey City Hospital	Jersey City, N. J.	City	1,200	94	..	6	1,165	Yes	1	March & Oct.	12	158 16	None
Newark City Hospital	Newark, N. J.	City	700	100	..	..	.....	Yes	1	July	12	301 29	$30
Kings County Hospital	Brooklyn	City	3,160	100	..	..	2,917	Yes	2	June & Nov.	12	939 19	None
Long Island College Hospital	Brooklyn	NPAssn	473	18	34	48	370	Yes	2	Jan.	12	126 34	$22.50
Bellevue Hospital	New York City	City	2,333	100	..	..	1,545	Yes	1	Jan. & July	12	1,344 38	$83.33
Morrisania City Hospital	New York City	City	539	100	..	..	649	No	3	Varies	18	247 27	None
New York Hospital	New York City	NPAssn	1,010	8	73	19	740	Yes	4	Jan.	12	316 57	$25
N.Y. Post-Grad. Med. School and Hosp.	New York City	NPAssn	411	13	3	84	317	Yes	1	Varies	12	81 26	.....
Presbyterian Hospital	New York City	NPAssn	965	33	42	25	1,161	Yes	5	Varies	12	231 45	$41.67
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	NP-Cy	645	49	39	12	472	Yes	2	Jan.	12	382 66	$41.67
Sea View Hospital [25]	Staten Island, N. Y.	City	1,788	99	1	..	165	No	1	May & Nov.	12	244 49	$100
Duke Hospital	Durham, N. C.	NPAssn	456	66	24	10	608	Yes	2	Jan.	36	195 57	$41.67
City Hospital	Cleveland	City	1,670	100	..	..	.....	Yes	1	Jan.	12	628 38	$71.50
University Hospitals	Cleveland	NPAssn	972	37	14	49	690	Yes	1	Jan.	12	348 54	$35
Starling-Loving University Hospital	Columbus, O.	State	276	46	19	35	263	Yes	1	Dec.	12	137 41	$25
Graduate Hospital of the Univ. of Pa.	Philadelphia	NPAssn	475	36	9	55	154	Yes	1	Jan.	12	100 49	None
Hospital of the Univ. of Pennsylvania	Philadelphia	State	508	36	24	40	328	Yes	1	Jan.	12	216 67	None
Pennsylvania Hospital	Philadelphia	NPAssn	560	43	32	25	307	Yes	1	Varies	12	191 ±50	$25
Presbyterian Hospital	Philadelphia	Church	425	30	12	58	201	Yes	1	Varies	12	95 38	None
Mercy Hospital [1]	Pittsburgh	Church	670	35	35	30	301	Yes	1	Dec.	12	144 32	.....
University of Virginia Hospital	University	State	311	24	46	30	440	Yes	2	Dec.	12	113 34	$22.50
State of Wisconsin General Hospital	Madison	State	632	88	7	5	.....	Yes	3	March	36	257 70	$25
Milwaukee County General Hospital	Wauwatosa, Wis.	County	1,125	100	..	..	502	Yes	1	May	12	404 31	$50

* Because of low death rate, autopsy figures not compiled.

1. Fellowships.
2. No applications considered except from own interns.
3. Includes urology.
4. Residencies at Buffalo City Hospital are three year appointments including internship. Salary and bonus paid in lieu of maintenance.
5. Reappointments annually for three and four years following internship.
6. Dental and medical degrees required.
7. Recently merged. Residencies reported available.
8. Includes obstetrics.
9. Includes pediatrics.
10. Includes neurosurgery.
11. Includes neurology.
12. Not a hospital; outpatients only.
13. Appointments are for four years and include two years at City of Detroit Receiving Hospital in gynecology and two years at Herman Kiefer Hospital in obstetrics.
14. Affiliated with Barnes Hospital, St. Louis, gynecology.
15. Salary in part as chief house officer.
16. Affiliated with Crippled Children's Hospital School and Hospital for Crippled Adults, Memphis.
17. Clinical material available through affiliation with Anthony N. Brady Maternity Hospital, Memorial Hospital, St. Peter's Hospital and St. Margaret's House and Hospital, Albany, and Hudson City Hospital, Hudson, N. Y. Salary in lieu of maintenance.
18. Affiliated with Infants' Hospital, Boston.
19. Three serve six months in obstetrics.
20. Separate appointments in roentgenology and in radiation therapy.
21. Training in radiation therapy only.
22. Three months on medical service at University Hospitals, Minneapolis.
23. Includes proctology.
24. First six months spent at New York Post-Graduate Medical School, New York City.
25. Includes dermatology and syphilology.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET · · · CHICAGO, ILL.

Cable Address · · · · "Medic, Chicago"

Subscription price · · · · · Seven dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, AUGUST 29, 1936

TECHNICIANS

When the Council on Medical Education and Hospitals first began its work in 1905, the place of the technician in medicine was not significant. Today there are technicians of many varieties. A partial list includes clinical laboratory technicians, x-ray technicians, occupational therapy technicians, physical therapy technicians, hydrotherapy technicians, dietetic technicians, anesthetic technicians, dental technicians and many others. These professions, auxiliary to the practice of medicine, have grown up as the need for their services became apparent. Obviously their growth was uncontrolled and unstandardized since the exact need had not in itself been defined and since the new technical discoveries on which their services depend had not yet been even partially developed. Now, however, the significance of these auxiliary professions is becoming apparent. For that reason the Council on Medical Education and Hospitals in response to resolutions coming through the House of Delegates of the American Medical Association has undertaken an investigation of the available schools in the fields of physical therapy, occupational therapy and laboratory service and has set up certain minimum standards of education to guide students who wish to affiliate themselves with medicine in these fields. The standards for such schools are listed in this issue of THE JOURNAL.

There seem now to be available thirteen schools for physical therapy technicians which conform to the standards adopted by the American Medical Association. In its survey the Council inspected thirty-five schools and received complete information concerning their organization, faculty, prerequisites, curriculum, physical plant, records and affiliations. In the work the American Congress on Physical Therapy and the American Physiotherapy Association cooperated.

One hundred and ninety-six schools for the training of clinical laboratory technicians were visited by the investigators of the Council on Medical Education and Hospitals, and ninety-six of these schools were found to conform to the standards adopted by the American Medical Association. The American Society of Clinical Pathologists did the pioneering work in this field and lent its assistance to the Council in this study of schools for clinical laboratory technicians. The number of students in such schools varied from none in some of the schools that were found acceptable to 182 in the University of Minnesota. Incidentally, the next larger schools after the University of Minnesota boasted of thirty, twenty-three, and twenty-one students respectively. In all, there are ten universities and colleges which have established courses with a graded curriculum covering four years and leading to a university degree.

In the field of occupational therapy the Council has set up the essentials of an acceptable school and has investigated a considerable number of institutions. However, the specialty is in itself so new and the schools thus far on such an experimental basis that the Council has set Jan. 1, 1939, as the date on which such schools shall have set up an acceptable standard and curriculum before providing a list of acceptable schools.

Today medicine consists not of one profession but of many professions. In addition to the 155,000 physicians licensed to practice there are well nigh 1,500,000 people engaged in full time service for health and for the sick. In a profession closely allied to the welfare of mankind, greatly concerned with the safety and health of human beings, there must be minimum standards of education, morals and practice. In accepting these new responsibilities, the Council on Medical Education and Hospitals continues to render an efficient and useful service for the advancement of medicine and the welfare of the public.

STATUS OF VACCINATION AGAINST POLIOMYELITIS

Since the introduction more than a year ago of two poliomyelitis vaccines,[1] nearly 20,000 persons have received one or more inoculations of these monkey spinal cord preparations bearing the virus. Similar vaccines were tested in the laboratory by several groups during the previous two decades. Killed and partially attenuated virus was employed without demonstration of an adequate immunity in more than a certain percentage of experimental monkeys. Among the methods used to "attenuate" the virus, phenol, formaldehyde, desiccation, heating below the thermal death point of the virus and dilution were tried. Virus adsorbed to alumina gel and incorporated in olive oil and agar were tested in the hope that prolonged contact with the host might increase the quantity of antibody production. Neutralizing antibodies were produced in nearly all these attempts, but few animals resisted intracerebral or intranasal application of virulent virus as an

1. Brodie, Maurice, and Park, W. H.: Active Immunization Against Poliomyelitis, J. A. M. A. **105**: 1089 (Oct. 5) 1935. Kolmer, J. A.; Klugh, G. A., and Rule, Anna M.: A Successful Method for Vaccination Against Acute Anterior Poliomyelitis, J. A. M. A. **104**: 456 (Feb. 9) 1935. Kolmer, J. A.: Susceptibility and Immunity in Relation to Vaccination in Acute Anterior Poliomyelitis, ibid. **105**: 1956 (Dec. 14) 1935.

immunity test.[2] Indeed, in the hands of most workers a certain number developed paralysis in the course of vaccination whenever the immunizing preparations contained living virus. None of these early investigators ventured to apply their results to man. These facts apply as well to virus mixed with sodium ricinoleate, since McKinley and Larson [3] have shown that one of four monkeys succumbed to the disease during immunization.

Flexner [4] and many others warned that there was no precedent in the assumption that a poliomyelitis virus adapted to animals for many generations was less virulent for man, the original host, although this seemed to be the case with other viruses (vaccinia, rabies, psittacosis). Since it was known that experimental monkeys developed the disease in only a few instances when fully virulent virus preparations were administered intracutaneously or subcutaneously, it was believed that little danger was involved in the administration of vaccines even though some active virus might be present.

The success in production of active immunity in other virus diseases (foot and mouth disease, louping ill, influenza, psittacosis and herpes) with preparations treated with formaldehyde that contained little or no living virus prompted Brodie [5] to reapply this method to poliomyelitis. This investigator showed that poliomyelitis virus treated with dilute solution of formaldehyde was noninfectious for monkeys but still produced virus-neutralizing substances if employed while fresh. The stage was thus set for the application of this method to man.

Even while these inoculations were proceeding, three reports by experienced workers in this field appeared denying the effectiveness of immunity produced by either the formaldehyde vaccine (Brodie) or the ricinoleated vaccine. Both Schultz and Gebhardt [6] and Olitsky and Cox [7] showed that such "immunized" monkeys were not resistant to intracerebral or intranasal test applications of virus. Gordon [8] came to a similar conclusion in a study of the response of monkeys to virus adsorbed to alumina gel. However, these facts have been accepted for years. The lack of resistance to such heroic tests as given by intracerebral and intranasal routes does not alone negate the practical value of a vaccine, as antirabic vaccination [9] and vaccination against herpes [10] and louping ill [11] likewise fail to produce an immunity against a test dose introduced directly into the nervous system. Cox and Olitsky have produced such an immunity to equine encephalomyelitis.[12] Field studies of a vaccine in man seemed to be the only method of determining the worth of vaccination against poliomyelitis.

Paralytic poliomyelitis with high fatality resulted from the use of a vaccine prepared with sodium ricinoleate. Official action by the United States Public Health Service followed the report of Leake.[13] In all, nine cases with five deaths occurred following the use of this vaccine under conditions that clearly incriminated the vaccine, since the disease set in after a characteristic incubation period and paralysis appeared in the same or contralateral extremity in which the vaccine had been given. The unusually high mortality was explained as due to primary involvement of the cervical cord with spread to the medulla. The case against the formaldehyde vaccine (Brodie) is considered by many to be inconclusive and too hastily drawn. Seven cases have been reported [14] at various intervals following the use of this vaccine. All occurred in areas where poliomyelitis was epidemic. In all cases adequate, and in some instances multiple, opportunities for exposure to the natural disease have been traced. The interval elapsing between the last administration of the vaccine and the onset of paralysis was five days, fourteen days, seventeen days, twenty-three days, six weeks, twenty-three weeks and thirty-two weeks. None of these cases can be ascribed to the vaccine with any degree of certainty. The diagnosis is in doubt in two cases and in the latter three the interval between vaccination and onset of the disease was unduly long to incriminate the vaccine. Spasmophilia with low blood calcium and bilateral otitis media initiated disease nine days before weakness was noted in the fourth patient. Even in the one remaining case that was fatal, exposure to the natural disease was traced. Virus was isolated from the spinal cord in this case by Kessel [15] but comparisons to known virus strains have not been completed. However, little is known of the adaptability of monkey virus to man, so that conclusions drawn from such studies can be accepted only with reservations.

Five of the seven cases mentioned occurred in Kern County, Calif., where a controlled study of the vaccine has been carried out by Gifford and Bogen.[14] These authors vaccinated 3,723 persons during 1935. Contact was traced in more than a thousand cases during that year. Of these, 545 were vaccinated, usually within a

2. Summarized in Poliomyelitis, International Committee for the Study of Infantile Paralysis, Baltimore, Williams and Wilkins Company, 1932.
3. McKinley, J. C., and Larson, W. P.: Sodium Ricinoleate and Active Immunity Against Experimental Monkey Poliomyelitis, Proc. Soc. Exper. Biol. & Med. **24**: 297 (Jan.) 1927.
4. Flexner, Simon: Concerning Active Immunization in Monkeys, Science **82**: 420 (Nov. 1) 1935.
5. Brodie, Maurice: Active Immunization in Monkeys Against Poliomyelitis with Germicidally Inactivated Virus, J. Immunol. **28**: 1 (Jan.) 1935.
6. Schultz, E. W., and Gebhardt, L. P.: On the Problem of Immunization Against Poliomyelitis, California & West. Med. **43**: 111 (Aug.) 1935.
7. Olitsky, P. K., and Cox, H. R.: Experiments on Active Immunization Against Experimental Poliomyelitis, J. Exper. Med. **63**: 109 (Jan.) 1936.
8. Gordon, F. B.: Active and Passive Immunity in Experimental Poliomyelitis, Arch. Path. **21**: 558 (April) 1936.
9. Galloway, I. A.: The "Fixed" Virus of Rabies: The Antigenic Value of the Virus Inactivated by the Photodynamic Action of Methylene Blue and Proflavine, Brit. J. Exper. Path. **15**: 97 (April) 1934.
10. Andervont, H. B.: Herpetic Virus in Mice, J. Infect. Dis. **49**: 507 (Dec.) 1931. Bedson, S. P.: Immunization with Killed Herpes Virus, Brit. J. Exper. Path. **12**: 254 (Aug.) 1931.
11. Gordon, W. S.: Comparative Aspects of Louping Ill in Sheep and Poliomyelitis of Man **1**: 885, 1934.
12. Cox, H. R., and Olitsky, P. K.: Active Immunization of Guinea-Pigs with the Virus of Equine Encephalomyelitis: II. Immunization with Formolized Virus, J. Exper. Med. **63**: 745 (May) 1936.
13. Leake, J. P.: Poliomyelitis Following Vaccination Against the Disease, J. A. M. A. **105**: 2152 (Dec. 28) 1935.
14. (*a*) Brodie, Maurice: Personal communication. (*b*) Gifford, M. A., and Bogen, Emil: Immunization Against Infantile Paralysis in Kern County, Calif., J. A. M. A., to be published.
15. Kessel, J.: Personal communication.

fortnight of exposure. But two cases (0.37 per cent) developed in the vaccinated controls, while six (1.26 per cent) occurred in 477 not so treated. While the incidence of poliomyelitis was little different in the vaccinated population (0.13 per cent) as compared with those remaining unvaccinated (0.14 per cent), opportunity for infection was said to have been definitely greater in the vaccinated group. Among 1,275 school children vaccinated in a case-matching controlled experiment, none developed the disease, while five of a similar number of unvaccinated controls came down with it. In New York and its environs [14a] 2,850 children have received the vaccine. Two cases developed, one six and another thirty-two weeks after vaccination, under circumstances in which the vaccine could be completely exonerated. Near Philadelphia [16] 500 persons were vaccinated and in North Carolina [17] 458 injections were made. No cases developed in the latter two groups.

While it has been pointed out [18] that poliomyelitis is not a sufficient public health problem to warrant vaccination, as the seasonal incidence of the disease seldom exceeds from 20 to 40 per hundred thousand, the economic disability and psychic trauma produced by residual paralysis lessen such objections to a considerable extent. The possibilities of specific prevention have not been explored to the limit. On account of the isolation of the central nervous system from the rest of the body, even from the blood, future experiments should explore the possibilities of intimate contact between the immunizing preparation and the spinal cord. Evidence points to the poliomyelitis virus as a poor antigen. Greater antigenic mass relative to protein content might increase the effectiveness of vaccines. The past history of formaldehyde vaccine (Brodie) should encourage further attempts to evolve an improved product in the laboratory. If application is again made to man, immunization should be carried out in interepidemic months and in the absence of the epidemic disease, as disregard of these precautions has directed undue suspicion against the vaccine.

Recent immunologic studies have further complicated the problem of vaccination. Aycock and Hudson,[19] who studied blood samples from the immunization experiment in North Carolina,[17] found virus-neutralizing substances to have been produced at the same rate in an unvaccinated control group as among those who received the vaccine. The suspicion that the virus-neutralizing antibodies did not accurately represent the immune state has been raised by the large number of convalescents that do not have these substances. Harmon and his co-workers [20] have shown that paralysis can occur with neutralizing substances present in the preparalytic and early paralytic days of the disease in man. If significant at all in active immunity against poliomyelitis, there may be some critical level that determines the immune state. The significance of the neutralizing substances was discussed at length by Harmon and Harkins [21] in THE JOURNAL last week.

While further experimental studies on specific vaccination are awaited with interest, an effective experimental method of blockade of infection at the nasopharyngeal portal of entry has been discovered by three groups of independent workers.[22] Tannic acid, trinitrophenol (picric acid) and mercurochrome in suitable dilution sprayed into the nostrils render monkeys refractive to intranasal instillation of virus for many days. Only elaborate field studies can determine whether this method is effective in limiting the spread of poliomyelitis in man.

16. Nicholson, Percival, and Strumia, M. M.: Personal communication.
17. Gilliam, A. G., and Onstott, R. H.: Results of Field Studies with the Brodie Poliomyelitis Vaccine, Pub. Health Rep. **51**: 160 (Feb. 14) 1936.
18. Leake, J. P.: Poliomyelitis: Present Knowledge and Its Bearing on Control, J. A. M. A., to be published.
19. Aycock, W. L., and Hudson, C. C.: The Development of Neutralizing Substance for Poliomyelitis Virus in Vaccinated and Unvaccinated Individuals, New England J. Med. **214**: 715 (April 9) 1936.
20. Harmon, P. H.; Harkins, H. N.; Fahey, J. J., and Wasbotten, P. M.: Significance of the Early Appearance of Neutralizing Substances in Poliomyelitis in Man, Proc. Soc. Exper. Biol. & Med. **34**: 585 (June) 1936.
21. Harmon, P. H., and Harkins, H. N.: The Significance of Neutralizing Substances in Resistance and Recovery from Poliomyelitis, J. A. M. A. **107**: 552 (Aug. 22) 1936.
22. Armstrong, Charles, and Harrison, W. T.: Prevention of Experimental Intranasal Infection with Certain Neutrotropic Viruses by Means of Chemicals Instilled into the Nostrils, Pub. Health Rep. **51**: 203 (Feb. 28) 1936. Sabin, A. B.; Olitsky, P. K., and Cox, H. R.: Protective Action of Certain Chemicals Against Infection of Monkeys with Nasally Instilled Poliomyelitis Virus, J. Exper. Med. **63**: 877 (June) 1936. Schultz, E. W., and Gebhardt, L. P.: Prevention of Intranasally Inoculated Poliomyelitis in Monkeys by Previous Intranasal Injection with Certain Chemical Agents, Proc. Soc. Exper. Biol. & Med. **34**: 133 (March) 1936.

Current Comment

PROTECTING THE PUBLIC

Control of the profession in the public interest, as clearly shown by Justin Miller,[1] is a function of the state. Expressed in various ways and in differing degrees in successive ages and with respect to the several professions, the power of the state remains, even when dormant, ultimate and unassailable. The regulation of medical practice in such a manner as to safeguard the citizens against the dangers of ignorance and incompetence is therefore one of the most fundamental responsibilities of the state. That the people of the United States acknowledge the vital importance of such regulation is evidenced by the fact that every one of the forty-eight states and the District of Columbia have enacted statutes prohibiting the practice of medicine by unqualified persons. The enforcement of these statutes, however, has been severely hampered, almost nullified, by lack of funds. No state has appropriated funds to provide adequately for the examination of candidates for a medical license. Judgment and skill, which are of the utmost importance in the art of medicine, obviously cannot be appraised by a purely written examination, but the state boards, financially dependent on the fees of applicants, are unable to underwrite the cost of a complete practical examination. Facing this dilemma, the boards, in order to discharge

1. Miller, Justin: The Philosophy of Professional Licensure, Proceedings of the Annual Congress on Medical Education, Licensure and Hospitals, Feb. 12, 1934.

V 10
1936

their obligations to their constituents to the best of their ability, have resorted to the expedient of admitting to the examination only the graduates of approved schools. This procedure is, in effect, the only real safeguard against the licensing of unqualified persons. Since 1907 it has been possible for the states to adopt this policy because the American Medical Association, through the Council on Medical Education, was able to give to the public a trustworthy classification of medical schools. Without such a list, elevation of the standards of medical education and medical practice would have been impossible. The recent survey of medical education has convincingly demonstrated that appraisal of the medical schools of the country is a task far exceeding the resources of any state board. Thus it has come about that the Council, an extralegal body, without power save the power of public opinion, has become the most important factor in the procedure by which the states perform their regulatory function in the field of medicine. To the extent that the states rely on the findings of the Council, the people will be assured that only well trained and competent physicians will be licensed to practice. When examining boards neglect to avail themselves of the information furnished by this association, the character of medical service available in their respective communities must necessarily deteriorate.

EFFECTIVE TEACHING

The Flexner Report [1] of 1910 called public attention to two of the glaring defects of the medical schools of that day. One was the failure to enforce a reasonable standard of preliminary education in the admission of students. Another was the general dependence on didactic methods in the teaching of medicine and the want of hospital and dispensary facilities for personal and practical instruction in the clinical branches. The fixing of entrance requirements brought about a rapid decrease in the number of students and the closing of many of the weakest schools. When, after the war, the number of applicants began steadily to increase, it was usually taken for granted that the number of students that could be effectively taught depended on the size of the preclinical laboratories, and that in the clinical years, if desired, larger classes could be accommodated. Data from the medical schools of the United States and Canada now being analyzed by the Council indicate that the reverse is true. Adequate clinical facilities, under effective control by the school, are enjoyed by comparatively few institutions. Laboratories may be utilized by successive sections, but patients cannot be subjected to repeated examinations. In the preclinical subjects the curriculum can, if necessary, be adjusted to classes of 100 or 150, but the intimate contact of student and patient that is needed for the best type of clinical teaching is rarely obtainable for such large groups. For effective teaching in our medical schools, the factor limiting the size of classes would be in most cases the clinical rather than the preclinical facilities.

1. Medical Education in the United States and Canada, Bull. 4, Carnegie Report, June 4, 1910.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

The Poliomyelitis Epidemic.—The state health department of Alabama reports that 294 cases of poliomyelitis had been reported in the state from June 1 to August 21, with twenty-four deaths. Up to August 7 the number of cases was 247. Although the spread of the epidemic appears to be declining, Dr. James N. Baker, state health officer, advised against lifting restrictions on gatherings and migrations until no new cases have appeared in a county for twenty-one days. Dr. Baker pointed out that the epidemic has followed the main highways. National Guard encampments and the annual convention of the Alabama Department, American Legion, were postponed because of the epidemic. Newspapers reported August 6 that in Lauderdale County, a northern county which has been one of the principal centers of the disease, a ban on meetings for adults has been removed. Motion picture theaters, churches and other gathering places were closed for several days. The Birmingham *News* reported August 3 that Tennessee had had eighty-one cases with five deaths, Georgia and Mississippi nineteen cases each.

COLORADO

State Medical Meeting in Glenwood Springs.—The sixty-sixth annual session of the Colorado State Medical Society will be held at Hotel Colorado, Glenwood Springs, September 9-12, under the presidency of Dr. Walter W. King. Guest speakers will include:

Dr. Harold N. Cole, Cleveland, **The Syphilis Problem: How Shall We Meet It?**
Dr. William W. Bauer, director, Bureau of Health and Public Instruction, American Medical Association, Chicago, **Relationships Between the Practicing Physician and the Public Health Worker.**
Dr. Henry N. Harkins, Chicago, **Surgical Shock from Burns, Freezing and Similar Traumatic Agents.**

Clinicopathologic conferences will be held each morning beginning Thursday. At a joint meeting of the society with the Woman's Auxiliary Friday evening Dr. John H. J. Upham, Columbus, Ohio, President-Elect of the American Medical Association, will make an address entitled "These Changing Times in Medicine." Friday morning there will be a presentation of the past presidents of the society in the order of their seniority. Dr. Hubert Work, Englewood, former President of the American Medical Association and Secretary of the Interior under President Coolidge, is the senior living president of the society, having served in 1894-1895. The annual golf tournament will be held on the Hotel Colorado golf course Friday. The annual banquet and president's reception will be held Saturday evening. Dr. Albert C. McClanahan, Delta, will be toastmaster at the banquet, which will be dedicated to Dr. Josiah N. Hall, Denver, in recognition of his fiftieth year of attendance at the annual meetings of the society. He has been a member fifty-two years. Dr. Hall, now 76 years old, has been president of the state society, of the state board of health and of the state board of medical examiners. He served on the Judicial Council of the American Medical Association from 1921 to 1931 and was a member of the House of Delegates at various times from 1903 to 1921. He has been professor of medicine at the University of Colorado School of Medicine for many years. In 1916 he was president of the American Therapeutic Society. Dr. Arthur Jackson Markley, Denver, is the incoming president of the society. Physicians from other states who are members of their county and state societies are invited to attend this meeting.

FLORIDA

Lectures on Tuberculosis.—The tuberculosis committee of the Florida Medical Association and the Florida Tuberculosis and Health Association with other cooperating agencies recently conducted an institute in Miami for Negro physicians. Lecturers included Drs. Emile Bryant Woods, Jacksonville, director of the newly created bureau of maternal and child health, state department of health, on gynecologic conditions in persons with tuberculosis; Thomas E. Buckman, Jacksonville, childhood tuberculosis; Mathew Jay Flipse, Miami, director of the institute, symptomatology of pulmonary tuberculosis; George

N. MacDonell, Miami, bovine tuberculosis and its relation to tuberculosis in children; Ellsworth C. Brunner, physical diagnosis, and James H. Putnam, the rôle of general rest.

ILLINOIS

Expansion of the Elgin State Hospital.—A program of expansion is under way at the Elgin State Hospital, Elgin, which ultimately will involve the expenditure of $14,000,000 in addition to $3,000,000 which has already been appropriated from PWA funds. Plans have been approved for a diagnostic center, with a maximum of 200 beds; a tuberculosis pavilion, with 100 beds; infirmaries for male and female patients; a cottage for male patients; a two story apartment building to house members of the medical staff and their families, interns and residents, and a two story building for employees, with separate quarters for registered nurses and space for classroom and recreational activities. In the last five years the patient population at Elgin State Hospital has increased from 3,466 to 4,600. During the latter part of 1935, more than 600 patients were transferred to the Manteno State Hospital, Manteno, where a building expansion program has also been under way (THE JOURNAL, February 15, p. 543).

Chicago

Graduate Course on Cancer.—The tumor clinic of Michael Reese Hospital is sponsoring a graduate course on tumors during the week September 21-27. Morning sessions will be held at the Palmer House and afternoon sessions at the hospital, except those of Wednesday September 23, which will be at the Veterans' Administration Facility, Hines, Ill. Subjects and speakers are as follows: Monday, symposium on cancer of the breast, with Sir George Lenthal Cheatle, London, Dr. Henri Coutard, Paris, and Dr. Max Cutler as speakers; Tuesday, intra-oral cancer, Dr. Coutard and Dr. Cutler; Thursday, pelvic tumors, Dr. Coutard and Dr. Cutler; Friday, causes of cancer, Sir G. Lenthal Cheatle, and biopsy, Dr. Cutler; Saturday morning, high voltage x-rays, Arthur H. Compton, Ph.D., professor of physics at the University of Chicago; Gioacchino Failla, Ph.D., physicist of Memorial Hospital, New York, and Dr. Coutard. The Wednesday session at Hines Hospital will consist of clinics in which cases of interest from the cancer service of the hospital will be presented. Friday afternoon there will be demonstrations at Michael Reese of radium treatment of cancer of the cervix, insertion of radium needles, construction of radium molds and transillumination of the breast. In the evening there will be a banquet at which Dr. Morris Fishbein, editor of THE JOURNAL, will be the speaker. Sunday will be devoted to informal round table conferences.

INDIANA

Collection of Leonardo da Vinci Drawings.—A series of engraved copies of the anatomic drawings in the notebooks of Leonardo da Vinci have been presented to the Indiana University School of Medicine by Dr. George A. Collett, Crawfordsville. The drawings have been in the Royal Library at Windsor since the reign of Charles II, and the prints, made in 1795, are the work of Francesco Bartolozzi, a member of the Royal Academy and the historical engraver to King George III. The explanations accompanying the original drawings were written backward with the left hand, as all of da Vinci's notes were written, and must be read with the aid of a mirror. According to the state medical journal, it is supposed that the da Vinci notebooks were taken to England by the Earl of Arundel when he was ambassador at the court of Ferdinand II. They remained unappreciated in the Royal Library until the latter part of the eighteenth century, when they were brought to the attention of William Hunter.

IOWA

Society News.—Dr. Olan R. Hyndman, Iowa City, addressed the Floyd County Medical Society in Charles City, July 28, on intracranial surgery.——William L. Strunk, Sc.D., Decorah, chairman of the board of examiners in the basic sciences, discussed the basic science law and its operation before the Sixth Councilor District Medical Society and the Poweshiek County Medical Society at Grinnell, June 25.——Speakers at the summer meeting of the Upper Des Moines Medical Society in Arnolds Park, August 6, were Drs. Walter L. Bierring, Des Moines, on the social security act; Frank J. Heck, Rochester, Minn., practical treatment of the anemias; Edwin M. Miller, Chicago, appendicitis in children, and Edwin B. Winnett, Des Moines, newer developments in the treatment of diabetes; the evening address was delivered by Dr. Frank H. Krusen, Rochester, Minn., on "Medicine Keeps Pace with the Machine Age."

KANSAS

Physician Honored.—A certificate of honor for services to his profession and to the Sedgwick County Medical Society was presented, July 22, to Dr. Lloyd P. Warren, a patient in Wichita Hospital. Dr. George E. Milbank, president of the medical society, and Mr. Mac F. Cahal, executive secretary, made the presentation. Dr. Warren has been practicing in Wichita since 1902. He joined the Sedgwick County Medical Society soon after it was organized in 1903, becoming its president in 1914. Dr. Warren has been ill for several months, it was stated. Dr. David W. Basham, past president of the society, is the only other person to have received this tribute from the society, newspapers reported.

LOUISIANA

Society News.—At the joint scientific and second quarterly executive meeting of the Orleans Parish Medical Society, July 13, Drs. Arthur Neal Owens discussed "Treatment of Varicose Ulcers of the Lower Extremity" and George W. Robinson, "Local Use of Quinine in Ophthalmology."——A symposium on appendicitis constituted the program of the June meeting of the staff of Mercy Hospital, New Orleans; speakers were Drs. Philip C. DeVerges, Max M. Green, Edwin L. J. Zander, Lloyd J. Hanckes and George H. Hauser.

MARYLAND

Vital Statistics.—There were 13,503 births reported in Maryland from January 1 to June 30, as compared with 13,817 during the corresponding period of 1935. A total of 11,564 deaths was recorded, in comparison with 11,253 in the corresponding months of 1935. The greatest increases occurred in the deaths from heart disease and diseases of the kidneys, with 2,718 deaths attributed to the former in 1936 as compared to 2,474 in 1935, and to the latter 1,294 in 1936 against 1,178 in 1935. Communicable diseases showed an increase, with totals of 28,565 in 1936 and 25,123 in 1935. Measles, scarlet fever and whooping cough were responsible for one third of the total sickness reported, while syphilis and gonorrhea, the pneumonias and tuberculosis were charged with another third. There were 350 cases of meningitis in 1936, as compared with 156 during the same period of 1935; 154 cases of diphtheria, six less than last year; nine cases of tularemia; seven of Rocky Mountain spotted fever; fourteen of undulant fever, and six of malaria. With four cases of poliomyelitis, the state recorded one less than the previous year for this period.

MASSACHUSETTS

Centenary Celebration Features Natural Sciences.—A symposium on the sciences will be held at Williams College, Williamstown, in October, as a special feature of the centenary celebration of Mark Hopkins' induction as fourth president of the college. Participating in the symposium will be Irving Langmuir, LL.D., of the General Electric Laboratories, Schenectady, N. Y.; Herbert Spencer Jennings, Ph.D., Henry Walters professor of zoology, Johns Hopkins University, Baltimore, and John Clarke Slater, Ph.D., professor of physics, Massachusetts Institute of Technology, Cambridge. William Mansfield Clark, Ph.D., De Lamar professor of physiologic chemistry at Johns Hopkins, who is chairman of the program dealing with the sciences, will preside.

MICHIGAN

Personal.—Dr. Robert C. Farrier, Morgantown, W. Va., has been appointed health officer of Delta County, with headquarters at Escanaba.——Dr. Lars W. Switzer, Ludington, has been placed in charge of the new health unit for Mason and Manistee counties; headquarters will be tentatively established at Manistee.

Fellowships at Wayne University.—Fellowships in the preclinical basic medical sciences are to be established at Wayne University College of Medicine during the coming year. Fellows will elect a major subject in which they will devote about half their time to teaching and half to research; they will also select a minor subject for graduate study only. They will be registered as graduate students and will be working toward the master's degree. The fellowships are open to students on a competitive basis who have completed the sophomore year of medicine and have the bachelor's degree and to graduates who have the bachelor's and doctor's degrees in medicine. Each fellowship will pay a salary of $100 a month for ten months and is renewable on recommendation of the head of the department for three years. For further information address Dr. Raymond B. Allen, dean, Wayne University College of Medicine, Detroit.

V 107
1936

NEW MEXICO

Tuberculosis Conference.—The Rocky Mountain Tuberculosis Conference will be held at the Franciscan Hotel, Albuquerque, September 28-29. Speakers will include:

Dr. Raymond J. Friel, Salt Lake City, Surgical Collapse of the Lung.
Dr. James M. Odell, The Dalles, Ore., Value of Phrenic Nerve Interruption as the Sole Procedure in Pulmonary Tuberculosis.
Dr. Felix P. Miller, El Paso, Modified Technic in Thoracoplasty in Tuberculosis.
Dr. Charles F. Stough, Colorado Springs, Thoracoplasty.
Drs. Munford Smith and Howard W. Bosworth, Los Angeles, When Should Artificial Pneumothorax Treatment Be Discontinued?
Dr. Arthur E. Guedel, Beverly Hills, Calif., Anesthesia to the Tuberculous.
Dr. Harry J. Corper, Denver, Virulence of Tubercle Bacilli.
Dr. John W. Flinn and John S. Flinn, B.Sc., Prescott, Ariz., Physiologic Action of Climate and Its Application in the Treatment of Tuberculosis.
Dr. John W. Shuman, Los Angeles, Tuberculosis in the Aged.

In addition a sociological section of the conference will discuss problems of case finding and after-care, educating the public about tuberculosis and trends in care of the indigent sick by public agencies. Dr. Robert B. Homan Jr., El Paso, Texas, will give an address on "Socialized Medicine as It Affects the Private Sanatoriums." Luncheon sessions will be addressed by Dr. J. Arthur Myers, Minneapolis, on "Significance of Tuberculosis in Childhood," and Dr. Carl C. Dauer, New Orleans, "Distribution of Tuberculosis Mortality in Western United States."

NEW YORK

Name Changed.—The name of the New York State Sanitary Officers' Association has been changed to the New York Health Officers' Association. Dr. Chalmer J. Longstreet, Binghamton, is president. Vice presidents are Drs. Myron M. Metz, Williamsville; Charles G. Lenhart, Spencerport, and James H. Flynn, Troy; the secretary is Dr. Guy H. Turrell, Smithtown Branch.

New York City

Training for the Specialties at Post-Graduate School.—New York Post-Graduate Medical School announces that henceforth training provided as a preparation for practice of a specialty will be restricted entirely to residencies in the hospital, except the training offered in the departments of dermatology and radiology. Courses for the general practitioner have been shortened to a maximum of three months.

Sentenced for Fraudulent Insurance Claim.—Dr. Abraham Benjamin was sentenced July 27 in the court of general sessions to serve from fifteen months to two and a half years in Sing Sing for a fraudulent accident claim. He is said to have conspired with a man who posed as a lawyer to defraud insurance companies. The probation officer reported that Dr. Benjamin had furnished affidavits for fraudulent claims for fourteen years.

Increase in Acute Alcoholism.—Admissions to Bellevue for alcoholism during the first six months of 1936 were at the rate of 12,378 for the year, the department of hospitals recently reported. This is a large increase compared with 9,139 cases in 1935 and 7,649 in 1934. The most serious situation in connection with alcoholic patients arises from the number who fall and sustain a head injury, the report said. A special operating room will be opened this fall in the psychiatric pavilion for surgical treatment of head injuries.

New Corporation to Finance Health Department Research.—A non-profit making corporation known as Health Research, Inc., was recently formed by the New York City Department of Health to accept and administer funds offered for financing research in the city's laboratories. For many years private contributions have been made to finance research under the direction of Dr. William H. Park as Biggs professor of preventive medicine and director of bacteriologic laboratories at New York University College of Medicine and administered by the college. Dr. Currier McEwen, assistant professor of medicine, assistant dean and secretary at New York University College of Medicine, was elected president of the new unit; Dr. Park, vice president, and Dr. Wade W. Oliver, professor of bacteriology, Long Island College of Medicine, Brooklyn, secretary. The department plans to open a convalescent serum center under the new arrangement.

Brooklyn Cancer Institute in New Quarters—The new Brooklyn Cancer Institute will be opened at Kings County Hospital about September 15 as an independent clinical unit of the division of cancer of the city department of hospitals, with Dr. William E. Howes as administrative clinical director. There will be three services: surgical, with Dr. John E. Jennings as director; medical, with Dr. Henry M. Moses as director, and radiotherapy, with Dr. Howes as director. The three directors are to be responsible as a committee for clinical policy in general and for the treatment and care of patients individually. For general administrative purposes the institute is under the supervision of the medical superintendent of Kings County Hospital. A visiting staff of thirty-one physicians has been appointed. It is planned that beds are to be used as far as possible for cases of doubtful classification and for recognized tumor cases requiring short hospitalization, so that the patients who are still reclaimable may find facilities for care. The institute was formerly at Cumberland Hospital.

OHIO

Society News.—At a meeting of the Seventh Councilor District of the Ohio State Medical Association in Cadiz, June 24, speakers were Drs. Clyde L. Cummer, Cleveland, on "The Present-Day Diagnosis and Treatment of Syphilis" and Clifton F. McClintic, Moundsville, W. Va., "The Personality of the Criminal." —— Dr. Roy Glenn Spurling, Louisville, Ky., addressed the Hempstead Academy of Medicine in Portsmouth July 13, on injuries to the head.

Personal.—Dr. Archie J. Martin, Wheeling, W. Va., has been appointed health officer of Belmont County to succeed Dr. Frank R. Dew.——Dr. William R. Coleman, Bremen, has been made health officer of Fairfield County.——Dr. Paul M. Moore Jr., formerly assistant professor of otolaryngology, State University of Iowa College of Medicine, Iowa City, has been appointed to the staff of the Cleveland Clinic to fill the vacancy caused by the death of Dr. William V. Mullin.——Dr. John A. Carter, New Paris, has been appointed health commissioner of Clermont County.

OKLAHOMA

Personal.—Dr. Leroy Long, Oklahoma City, former dean and professor of surgery, University of Oklahoma School of Medicine, has been chosen for the state hall of fame by the Oklahoma Memorial Association. He will be a guest of honor at the annual statehood day dinner November 16.

Society News.—The Tulsa County Medical Society recently voted that its members would not practice in hospitals that charge a fee that includes medical service, either by interns or by members of their staffs.——The Oklahoma Tuberculosis and Health Association will conduct an institute in Tulsa September 24; speakers will include Drs. Lewis J. Moorman, Oklahoma City, on "Procedure in Finding Source of Contact in Children Showing Reaction to the Tuberculin Test" and Robert M. Shepard, Tulsa, president of the association, "Manifestations of Early Tuberculosis and X-Ray Interpretations." ——Dr. Andronicus J. Wells, Calera, was elected president of the Southeastern Oklahoma Medical Association in July at a meeting in Poteau.

RHODE ISLAND

Publicity Committee Appointed.—At the recent annual meeting of the Rhode Island Medical Society a publicity committee was appointed with Dr. James W. Leech, Providence, as chairman and the following members: Drs. Russell S. Bray and Peter P. Chase, Providence; Charles Bradley, East Providence; Guyon G. Dupre, Woonsocket; Stanley Sprague, Pawtucket; Alfred M. Tartaglino, Newport; George L. Young, East Greenwich, and John W. Helfrich, Westerly. Functions of the committee as outlined are threefold: to abstract scientific papers for the lay press; to serve as a mouthpiece for the medical profession when the press desires an expression of opinion on some question of medical policy, and to institute propaganda for the enactment of beneficial and the defeat of harmful legislation.

SOUTH CAROLINA

New Health District Officers.—Dr. Clair A. Henderson, Williamstown, has been made health officer of the district composed of Dillon and Marion counties, with headquarters at Dillon. Dr. Goodman Bare, Starr, has been placed in charge of the district including Edgefield, McCormick and Saluda counties, and Dr. George H. Zerbst, Charleston, of the district consisting of Sumter, Clarendon and Lee counties.

Society News.—The Eastern Carolina Medical Assembly, comprising the counties of Marion, Dillon and Horry, met June 23 at Myrtle Beach. Speakers were Drs. Julian P.

Price, Florence, on "Pernicious Malaria in Children"; George H. Bunch, Columbia, "Mortality in Acute Appendicitis"; Alfred R. Shands Jr., Durham, N. C., "Fractures of the Lower End of the Humerus"; Walter R. Mead, Florence, "Cerebral Thrombosis," and Robert E. Seibels, Columbia, "Maternal Mortality in South Carolina." Dr. James A. Hayne, Columbia, state health officer, participated in the discussions.

TENNESSEE

Society News.—Dr. James B. Neil, Knoxville, addressed the Campbell County Medical Society, La Follette, July 30, on transurethral prostatic resection.——At a meeting of the medical society of Cumberland, Jackson, Overton, Putnam and White counties, Drs. Andrew F. Richards, Sparta, and Harlan H. Taylor, Cookeville, spoke on "Ether Anesthesia" and "Acute Surgical Emergencies of the Abdomen" respectively.—— Dr. Cecil E. Newell, Chattanooga, will address the first fall meeting of the Hamilton County Medical Society, September 3, on "Surgical Treatment of Goiter."—— Speakers before the Five-County Medical Society (Hardin, Lawrence, Lewis, Perry and Wayne counties) in Waynesboro July 28 were Drs. Leo C. Harris Jr. and Harrison H. Shoulders, Nashville, on "Congenital Cystic Disease of the Lungs" and "Diagnosis of Acute Abdominal Conditions" respectively. Dr. Charles C. Stockard, Lawrenceburg, reported a case of agranulocytosis.——Dr. William Britt Burns, Memphis, addressed the Rutherford County and Stone River Academy of Medicine, July 8, on "Cerebral Hemangioma."——Dr. Edward William Alton Ochsner, New Orleans, addressed the Chattanooga and Hamilton County Medical Society, July 15, on "Treatment of Peptic Ulcer Based on Physiologic Principles."

TEXAS

Sentenced for Using Mails to Defraud.—J. Howard Christian, a pharmacist of Fort Worth, was recently sentenced to two years in the federal penitentiary at Leavenworth, Kan., following conviction on a charge of using the mails to defraud. At the same time he received a suspended sentence of five years on two other counts of the indictment, which was brought after he had attempted to obtain the annual registration permit of a deceased physician. In addition to the federal prosecution Christian was prosecuted by the state for forgery and sentenced to two years in the Texas State Penitentiary for having forged the physician's name to his application for the registration. Christian was first arrested in January 1935 by the special agent of the Texas State Board of Medical Examiners. After his conviction in the state courts he appealed the case, but his conviction was affirmed and a rehearing was denied.

VIRGINIA

New Health Officers.—Dr. Robert D. Hollowell, Charlottesville, who recently received the certificate in public health from Johns Hopkins University School of Hygiene and Public Health, Baltimore, has been appointed director of the health district including Albemarle County, Charlottesville and the University of Virginia. He succeeds Dr. Charles Howe Eller, who recently became assistant director of the state bureau of rural health. Dr. Hugh B. Magill Jr., Norfolk, has been made director of the Northampton County Health department to succeed Dr. Albert B. McCreary, Eastville, who resigned to join the Florida State Department of Health. Halifax and Pittsylvania counties, heretofore in a joint health district, now have separate departments, with Dr. Daniel C. Steelsmith, South Boston, in charge in Halifax and Dr. William H. Walcott, Chatham, in Pittsylvania. Dr. George E. Waters, Williamsburg, has resigned as director of the Peninsula health district, which includes Warwick, Elizabeth City, James City and York counties.

WASHINGTON

Society News.—Dr. Warren B. Penney, Tacoma, was elected president of the Washington State Tuberculosis Association at the annual meeting at Longview, June 18-20.—— Speakers at a meeting of the Yakima County Medical Society, Yakima, June 8, were Drs. Louis P. Gambee, Portland, on "Some Phases of the Intestinal Obstruction Problem"; John R. Montague, Portland, "Nonmyxedematous Hypothyroidism," and Walter Raymond Jones, Seattle, "Venereal Disease Patients' Assets."—— Dr. Raymond H. Somers, Seattle, was elected president of the Washington State Society for Mental Hygiene at its annual meeting in Tacoma, June 4.

WEST VIRGINIA

Society News.—Drs. Chester D. Christie and John W. Holloway, Cleveland, addressed a joint meeting of the Monongalia, Marion and Harrison county medical societies recently in Morgantown, on "Thyrotoxicosis in the Aged" and "Duodenal Ileus" respectively.—— Dr. Arthur A. Shawkey, Charleston, addressed the Boone County Medical Society, Madison, July 15, when the society was installed as an official component of the West Virginia State Medical Association. Dr. William V. Wilkerson, Highcoal, is president, and Dr. Robert L. Hunter, Whitesville, secretary.——Dr. Oscar B. Biern, Huntington, addressed the Cabell County Medical Society, Huntington, July 9, on "Graphic Registration of the Heart Action." ——At a meeting of the Kanawha Medical Society, Charleston, recently Dr. William C. Stewart, Charleston, spoke on "Rheumatic Fever and Rheumatic Heart Disease in West Virginia."

WISCONSIN

State Medical Meeting at Madison.—The ninety-fifth annual meeting of the State Medical Society of Wisconsin will be held in Madison, September 9-11, at the Memorial Union. The first day will be devoted to a joint meeting with the cancer institute sponsored by the University of Wisconsin, announced in THE JOURNAL August 8, page 438. The remaining two days will be occupied with general and section meetings, round table luncheons and symposiums. Guest speakers at general sessions will include:

Dr. John D. Camp, Rochester, Minn., X-Ray Diagnosis of Tumors of the Brain and Spinal Cord.
Dr. Richard W. Telinde, Baltimore, Pathologic Significance of Bleeding After the Menopause.
Dr. James E. M. Thomson, Lincoln, Neb., Removal of Internal Fixation After the Reduction of Certain Fractures by Use of a Beaded Wire.
Dr. James A. Johnson, Minneapolis, Treatment of Carcinoma of the Rectum in the Inoperable Case by Electrocoagulation.
Dr. Arthur F. Bratrud, Minneapolis, Injection Treatment of Hernia.
Dr. Meredith F. Campbell, New York, Pyuria in Children.
Dr. Claude F. Dixon, Rochester, Minn., Practical Considerations in Treatment of Colonic Carcinoma.

Guests who will address section meetings and participate in symposiums include:

Drs. Kaare K. Nygaard and Mandred W. Comfort, Rochester, Minn., Determination of Potential Hemorrhage in Cases of Jaundice by the Photo-Electric Method.
Dr. Avery D. Prangen, Rochester, Minn., Clinical Problems in Refraction.
Dr. Francis L. Lederer, Chicago, Problems in Diagnosis and Treatment of Malignancies of the Nasal Accessory Sinuses.
Dr. Joseph L. Miller, Chicago, The Problem of the Ameba Histolytica Carrier.
Dr. John H. Skavlem, Cincinnati, Basic Points in Roentgen-Ray Studies of Lung Anatomy and Pathology.
Dr. Nathan A. Womack, St. Louis, Carcinoma of the Bronchus and Its Surgical Treatment.
Dr. John Alexander, Ann Arbor, Bronchiectasis.
Dr. Jerome R. Head, Chicago, Acute and Chronic Empyema.
Dr. M. Herbert Barker, Chicago, Cyanate Therapy of Hypertension.

The annual dinner will be held at the Hotel Loraine Thursday evening September 10 with Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, as the speaker. His subject will be "The Hospital and the Doctor." Dr. Fishbein will also address the Woman's Auxiliary Thursday morning.

HAWAII

Hawaii's Record Low Death Rate.—The lowest mortality rate on record for the Territory of Hawaii was achieved in the fiscal year ended June 1935 with a rate of 8.42 per thousand population, exclusive of nonresidents, according to the annual report of the board of health recently issued. This figure compares with a rate of 9.69 in 1934. There were 3,236 deaths, a decrease of 443, or 12 per cent, under 1934. The lowest infant mortality rate was also recorded in 1935. There were 957 deaths, or a rate of 64.53 per thousand live births. There were 9,252 births recorded. Forty-four mothers died from puerperal causes during the year. The maternal death rate was 4.64 per thousand live births and stillbirths. There were 3,578 cases of communicable diseases reported as compared with 8,870 in 1934. The most notable reduction was for diphtheria, of which there were fifty-three cases with no deaths. There were 2,995 cases of tuberculosis with 307 deaths, giving a new low rate of 80.4 per hundred thousand of population. Earlier rates were 99.7 in 1933 and 89.19 in 1934. Two cases of plague were found in human beings and ten in rodents. The sum of $705,587.88 was expended during the year for health activities. Additional expenditures included $1,218.63 for plague activities, $1,987.72 for diphtheria immunization, and $671.01 for medical inspection of school children.

V 10
1936

PHILIPPINE ISLANDS

Society News.—The Leyte Medical Association was organized with sixteen members recently. Dr. Anatolio Dasmarinas was elected president and Dr. Federico Campos, secretary.——Dr. Pedro T. Lantin, Manila, addressed the Tayabas Medical Society, Lucena, May 3, on typhoid fever.——Dr. Fernando Calderon addressed the Manila Medical Society recently on treatment of retroversion of the uterus. Drs. Antonio G. Sison and Jose G. Cruz presented a case of hyperparathyroidism.

GENERAL

Applications for Certificates of Special Board. — The American Board of Psychiatry and Neurology announces that applications for certificates to be granted at its next meeting, December 29-30, must be sent before October 30 to the secretary, Dr. Walter Freeman, 1028 Connecticut Avenue, Northwest, Washington, D. C.

Industrial Accident Boards and Commissions. — The International Association of Industrial Accident Boards and Commissions will hold its twenty-third annual convention in Topeka, Kan., September 21-24, under the presidency of G. Clay Baker, commissioner of workmen's compensation in Kansas. Tuesday September 22 will be devoted to a consideration of medical problems associated with workmen's compensation, including injection method of treatment of hernia, effect of trauma in lighting up tuberculosis, measurement of schedule injuries under the various laws, and rating of eye disabilities. In addition, the association for the first time will conduct a separate medical section meeting Wednesday for physicians, dealing with technical medical subjects in relation to workmen's compensation. Dr. John F. Hassig, Kansas City, Kan., is chairman of the medical committee.

Prevalence of Smallpox.—A recent analysis of the geographic distribution of smallpox in the United States and Canada by the Metropolitan Life Insurance Company revealed that eight of the most sparsely populated states accounted for 5,054 of the 8,021 cases in the United States. The combined smallpox prevalence rate of these eight states (Washington, Idaho, Montana, Wyoming, Colorado, South Dakota, Nebraska and Kansas) was 64 cases per hundred thousand of population. The other forty states, with an aggregate population of nearly 120,000,000, reported 2,967 cases, giving a case rate of only 2.5 per hundred thousand. There was no smallpox in seven states (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, Pennsylvania and Rhode Island), while, in ten others, less than one case was reported for every 100,000 inhabitants. None of the states east of the Mississippi except Wisconsin experienced sickness rates in excess of three cases per hundred thousand of population during 1935.

Sixteenth Century Indian Herbal to Be Published.—The Smithsonian Institution, Washington, D. C., has arranged to publish what is said to be the first medical book produced in the New World, the "Badianus Manuscript," written in Aztec and translated into Latin. The original title was "A Book of Indian Medical Herbs composed by a certain Indian physician of the College of Santa Cruz, who is not theoretically learned but is taught only by experience. In the year of our Lord Saviour 1552." Martin de la Cruz was the author and Badianus the translator, both students at the College of Santa Cruz, the first college in the New World, established by the Spaniards for the Indians. Martin de la Cruz wrote in detail of diseases and remedies for them and produced brilliantly colored illustrations of the plants used in Aztec medicine, which have deteriorated little, according to an account in the New York *Times*. The manuscript found its way to Europe and eventually to the Vatican Library, where an investigator for the Smithsonian Institution found it about five years ago during a search for early Latin American texts. The translation and annotation of the Latin and Aztec text was made by Emily Walcott Emmart, Ph.D., Johns Hopkins University, Baltimore.

Prevention of Blindness.—The National Society for the Prevention of Blindness has issued its annual report for 1935. During the year the society cooperated in three summer session courses for the training of sight saving class teachers: Buffalo, Cleveland and Teachers College, Columbia University, New York. The number of sight saving classes increased from 458 in 1934 to 476 in 1935, and in New York alone five new classes were established in the fall. In its continued drive for the use of safety glass in automobiles, the society reports that twenty-three states and the District of Columbia have enacted laws making this mandatory. The society and the American Museum of Safety collaborated in a study of accidents resulting from fireworks, with the financial assistance of the American Pyrotechnic Industries. It was disclosed that 7,738 persons were injured and at least thirty persons were killed celebrating July 4, 1935. Of the 3,000 cases in which it was possible to obtain first hand information by means of a questionnaire or by personal visits, 214 had eye injuries, 104 of which were serious. Preliminary figures at the time the report was drawn up showed that ophthalmia neonatorum had decreased to 7.4 in 1935 from 8.2 in 1934. The society expended about $133,879 during the year.

FOREIGN

International Congress of Urology.—The sixth International Congress for Urology will be held at the Kunstlerhaus, Vienna, September 9-12. The subjects for discussion are treatment of carcinoma of the prostate, suppuration of the renal parenchyma, and the physiology and pathology of renal excretion. Among American speakers listed on the program are Drs. Edward L. Keyes, Joseph F. McCarthy and Henry G. Bugbee, New York; William F. Braasch, Rochester, Minn.; Hugh H. Young, Baltimore; Louis E. Schmidt, Chicago; George G. Smith, Boston, and Hugh Cabot, Rochester, Minn. Dr. Keyes is president of the International Society for Urology and Dr. Young a vice president of the congress.

International Society of Microbiologists.—At the second International Congress of Microbiology in London, July 25-August 1, speakers included the following Americans:

Dr. Francis Peyton Rous, New York, Evidence Concerning the Agency of Virus Diseases in the Etiology of New Growths.
Edwin O. Jordan, Ph.D., Chicago, Bacteria Causing Acute Inflammation of the Alimentary Tract and Their Mechanism of Action.
Dr. Hans Zinsser, Boston, Typhus Fever and the Rickettsias.
Dr. Ernest E. Tyzzer, Boston, Coccidia in Relation to Domesticated Animals.
Dr. Eugene L. Opie, New York, Significance of Allergy.
Michael Heidelberger, Ph.D., New York, Structure of Natural and Synthetic Antigens.
Dr. William H. Park, New York, Control of Diphtheria and Whooping Cough by Means of Specific Immunizing Reagents.
Dr. Jesse G. M. Bullowa, New York, Serum Treatment of Pneumonia.
Dr. Augustus B. Wadsworth, Albany, N. Y., The Relative Value of Antitoxic and Antibacterial Immunity in the Prophylaxis and Serum Treatment in Human and Animal Diseases in Which the Invasion by the Causative Bacterium May Occur in a Focal or Generalized Form.

A demonstration of procedure and apparatus for preservation in "lyophile" form of serum was presented by Earl W. Flosdorf, Ph.D., and Dr. Stuart Mudd, Philadelphia.

Deaths in Other Countries

Sir Alfred Keogh, who was director general of the British Army Medical Corps during the World War, died in London July 30, aged 79.——**Dr. Luigi Devoto,** professor of pathology, University of Pavia and an authority on occupational diseases, died July 20 in Milan, aged 72.——**Prof. Friedrich Breinl** of the University of Prague, Czechoslovakia, died July 29 of Rocky Mountain spotted fever, aged 48.

Government Services

Examinations for Medical Officers

The U. S. Civil Service Commission announces open competitive examinations for the positions of medical officer at $3,800 a year, associate medical officer at $3,200 and assistant medical officer at $2,600 a year, to fill vacancies in various branches of government service. To become eligible, applicants must qualify in one of the following branches of medicine and must state the branch or branches desired: cardiology; cancer diagnosis and treatment; eye, ear, nose and throat (singly or combined); urology; internal medicine and diagnosis; neuropsychiatry; pathology and bacteriology; roentgenology; surgery, general, chest and orthopedic; tuberculosis; venereal disease (clinical and public health aspects); industrial medicine and general practice. Applicants will not be required to report for examination at any place but will be rated on education and experience. Candidates for the position of medical officer must not have passed their forty-fifth birthday and, for the lower grades, their thirty-fifth birthday. Further details and application forms may be obtained from the secretary, Board of U. S. Civil Service Examiners, at any first class postoffice, from the commission at Washington, D. C., or from its district offices in the following cities: Atlanta, Boston, Chicago, Cincinnati, Denver, New Orleans, New York, Philadelphia, Seattle, St. Louis, St. Paul, San Francisco, Honolulu, Balboa Heights, C. Z., and San Juan, Puerto Rico. Applications must be filed before September 8.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 11, 1936.

The Nutrition of the People

In the house of commons a debate took place on the nutrition of the people—a question which unfortunately has become the subject of political propaganda. Mr. Johnston, a labor member, moved a resolution expressing concern at "widespread malnutrition." He quoted an estimate of $1,000,000,000 as the cost of national ill health and said that there was an accumulating mass of chronic underfeeding and underdevelopment among the poor. The adjutant general in his report for 1934 stated that "over 52 per cent of the men who went to the recruiting offices did not come up to the physical standard laid down. In the big industrial areas of the North the percentage of rejections rose to 68." The chief medical officer of health for the department of education in this report for 1934 said that twelve per thousand of school children were malnourished and fourteen per thousand undernourished. "It had been proved by Sir John Boyd Orr that 4,500,000 people in this country were trying to live below the minimum standard of the British Medical Association." We had organized limitation of production and restriction of markets. We drank one third of the quantity of milk per head that the Swede or Norwegian drank and one half of what the Yankee drank.

Sir Kingsley Wood, minister of health, said in reply that in the matter of nutrition this country had taken the initiative not only in investigation but in action. The word "malnutrition," on which Mr. Johnston hung his indictment, was much abused. He had not explained that the term meant much more than want of food—one more example of how a matter which was largely scientific and economic could be twisted for other purposes. He had quoted from Dr. M'Gongle's book "Poverty and Public Health" that the death rate of the 30 shilling family was double that of the 75 shilling. But the minister could quote from M'Gongle too, who pointed out the loose and confused manner in which the word malnutrition had been used and said that in the sense of implying an insufficient intake of food it was rare, but if it was used to signify a deviation from bodily growth or function attributable to qualitative defects of diet a high percentage of our population must at one time or other have been the victims of malnutrition. Mr. Johnston had also quoted Sir John Orr, who was a distinguished member of the minister's advisory committee. When his book was published one paper went so far as to use the headline "Sir John Orr's Indictment: Fifty per Cent of the People Starving." Those who quoted him should remember his final conclusion: "There is need for further investigation and further discussion of the whole question in all its complicated relationships." An equal authority and another member of the minister's committee, Professor Cathcart, said that malnutrition was due not so much to poverty as to ignorance and other causes of the same kind. Another authority, Sir Robert Hutchison, said that diseases due to overnutrition were increasing while those due to undernutrition were diminishing. If the allegations made were accurate and there was widespread malnutrition, the health of the population would be rapidly declining. But viewed over any period that enabled just comparisons to be made, our national health was improving, not merely steadily but remarkably. Again, if the allegations were true, our low death rates became difficult to explain. In the last twenty years we had added seven years to the expectation of life and reduced the infant mortality from 100 to 57 per thousand births. Another test was the incidence of tuberculosis and rickets. The death rate from tuberculosis was now less than a quarter of the rate fifty years ago. The number of deaths from rickets was only half the number five years ago and there had been a progressive diminution in the number of patients with active disease. Another test was the condition of the children. Recent medical inspections of over a million and a half school children showed that the condition of 14.6 per cent was excellent, 74 normal, 10.6 slightly subnormal, and only 0.7 bad. Medical reports from the post office showed that the boys of 16 applying for employment were on the average 16 pounds heavier and 1½ inches taller than those of twenty-five years ago. Girls of the same age were 10 pounds heavier and 1 inch taller than those of the corresponding class twenty-five years ago. The rejection of recruits for the army was used to build up a case. The standards of recruitment were high and were based on the principle that men must be fit to serve all over the world, in tropical as well as temperate climates. The rejections—about 35 per cent—did not reflect on the general health but were due to such causes as disease of the middle ear, defective teeth and defects of the lower limbs. Even in the areas depressed by unemployment, only signs of strain due to this cause were found and steady improvement in this direction was taking place. Malnutrition must be fought and increasing attention must be paid to the nutrition of the people. The government had adopted a policy to increase the consumption of milk. About 2,250,000 school children were receiving a daily ration of a third of a pint of milk for 1 cent and free milk was given to 300,000. Nearly all the maternity and child welfare authorities provided milk free or at cheap rates. The government was willing to support any practicable proposals for extending the scheme. The resolution was rejected by 359 votes against 139.

Anglo-French Surgical Meeting

By invitation of the president and council of the Royal College of Surgeons, members of the Académie de chirurgie attended a discussion at the college. They also visited St. Bartholomew's Hospital and the London Hospital, where they witnessed the operations.

Professor Hey Groves introduced the subject of the operative treatment of fracture of the neck of the femur. He confined his remarks to subcapital and transcervical fractures, which were almost entirely intracapsular and difficult to treat because of the poor blood supply of the head of the bone and the tendency to absorption of the neck. Accurate apposition and firm fixation were essential. For many years Whitman's method of plaster fixation held first place, but it was long and tedious and a strain on old patients and yielded only 50 per cent of successes. During the last six years the situation had been dominated by the Smith-Petersen three-flanged nail. The original operation entailed an incision of considerable size. Professor Hey Groves set himself the problem of insetting the nail without such open operation. He devised an instrument to guide the drill into the axis of the head and neck, which he exhibited. It had three vertical points, two of which were thrust through the skin and the third, which took the drill guide, lay outside the thigh. It was necessary to ascertain two points: the middle of the head of the femur and the point at the base of the neck where the axes of the neck and the shaft crossed each other. These points were obtained with the help of the x-rays and were marked on the skin. Only two tenotomy wounds were necessary for the introduction of the instrument. The drill having been thrust into the thigh and through the neck into the head, the instrument was removed, leaving the drill in position. A small incision was made with the drill as its center and the modified Smith-Petersen nail hammered in. The procedure was simple and did not impose too great strain on the old and feeble.

Mr. Watson-Jones showed a motion picture of his drill guide method. He had operated on sixty-four patients with a mortality of 6 per cent, a figure lower than could be secured by

V 10
1936

other methods. Bony consolidation was secured in 91 per cent. His technic consisted in inserting a stout drill guide under visual direction, which ensured accurate insertion of the nail.

Mr. Gwynne-Williams said that he had treated thirty-one cases of unimpacted fracture by the Smith-Petersen open operation. The average age of the patients was 65. He had six deaths—two from pulmonary embolism, one a year after operation from infection with Bacillus Welchii, one from septicemia, one from erysipelas and one from pyelonephritis. The operation involved no great loss of blood and no shock.

Mr. Edmund Lloyd advocated the lateral approach. He showed an instrument of precision which enabled the nail to be inserted through a small incision over the great trochanter, without the use of wires and without exposure of the fracture. His method required a developing room adjacent to the operating room or a portable dark room in the operating room and a radiographic staff able to take good lateral pictures.

Recent Work on Surgical Shock

Dr. John Beattie conservator of the museum of the Royal College of Surgeons, described recent work at the college laboratories on surgical shock. Experimental animals showed three stages. The first fall in blood pressure after trauma was due to loss of fluid. The period of recovery might last thirty minutes and then a gradual fall, terminating in death, took place. The work done in the laboratories pointed to the conclusion that the loss of fluid during the first phase was not the cause of death, which was due to something happening in the second stage, probably associated with impulses passing along the sympathetic nerve. Perhaps these impulses brought about some change in the central nervous system that was irreversible, and in consequence the blood pressure kept on falling until it became so low that death was inevitable. An animal shocked by trauma of the hind limb might die in two and one-half hours. But if the spinal cord was blocked by procaine hydrochloride the blood pressure was maintained and the animal was prevented from passing into a condition of shock. Cross circulation experiments confirmed the conclusion that the lethal factor in shock was abnormal nerve impulses.

PARIS

(From Our Regular Correspondent)

July 20, 1936.

Influence of Recent Social Laws on Leisure

Two recent laws are now in effect in France. One of these fixes the maximum number of working hours per week at forty, and according to the other law every employer is obliged to grant a paid vacation of two weeks annually to all employees who have been in his service for more than a year. Several interesting developments have followed the enactment of these laws. First, a government department has been created called the department of leisure, which will not only advise workers how to spend the hours in which they are not employed but also aid them as to where to spend their two weeks paid vacation period as cheaply and pleasantly as possible. The latter includes special excursion rates, in both summer and winter, to all parts of France.

A second development may appear strange to those who remember how the prohibition law in the United States was regarded as something that would never be needed in France. At the June 9 meeting of the Académie de médecine, the leading medical organization in France, Dr. Sieur stated that, if one desired that the forty hours a week law should fulfil the hopes of those who planned it, the following clauses ought to be inserted: 1. To limit the number of saloons (bistrots) and to control carefully the quality and quantity of alcoholic drinks dispensed by the reduced number of saloons. 2. That all cities possessing a large number of workers should make every effort to place at their disposition large areas of land, in which gardens could be developed by those obliged to work in congested industrial centers. This second suggestion will especially impress those who have visited France and observed the paucity of recreation parks in densely populated portions of Paris and other large cities.

Following the introduction of Dr. Sieur's resolution, a special committee was appointed to investigate these two questions. This committee submitted its report at the July 7 meeting, stating that in 1926 the Academy of Medicine had called attention to the marked increase in the consumption of alcoholic beverages in the postwar period. Unfortunately this warning was not listened to, and as a result the question of alcoholism has become a very serious one. One of the principal reasons why alcoholism has increased is the huge and rapidly increasing number of saloons. Whereas in many foreign countries strict control exists, the government pays no attention at all to the question in France. In most countries the tax on alcohol is very high and its sale is limited to specially controlled agents, but in France such a tax is far below what it ought to be. Under the loose supervision of saloons that exists in France, the medical profession is observing an increasing number of cases of insanity, cruelty to children and street accidents. The Academy agrees with the government that every possible means should be employed to ameliorate the condition of the working classes and hence suggests that the government should apply the following: 1. Limit the number of saloons and control the preparation of drinks sold in them. 2. Organize recreation centers for adults, in which only nonalcoholic drinks are sold. 3. Increase the number of playgrounds where the greatest possible attention shall be paid to physical development of young people. 4. Establish city gardens where the working people can raise some of their own vegetables; also construct hygienic dwellings to replace the many hovels of the large cities.

Treatment of Neuralgias by Radiotherapy

Radiotherapy occupies an important place at present in the treatment of neuralgia. This is especially true of pain due to spinal nerve root inflammation due to rheumatism. Minute doses are employed, much smaller than those employed in the treatment of cancer. Usually, at a single sitting, from 75 to 250 roentgens is given over the nerve roots or the involved plexus, the total dosage being from 1,000 to 2,500 roentgens. Some radiologists employ an even higher dose. At the May 8 meeting of the Société médicale des hôpitaux, Coste and his associates called attention to the fact that this method is often followed by an exacerbation of the pain. Some radiologists are inclined to disregard such a result, whereas others, like the authors, considered such exacerbations a marked objection. Usually the increase of pain diminishes rapidly and then its relief follows. Coste and his associates, however, have observed that in some cases the exacerbation of pain does not cease so suddenly but continues for some length of time, so that the patient suffers intensely. Hence prudence demands some modification of the dosage, lest this remarkable method fall into disrepute. The experience of the authors has convinced them that the relief of pain in these neuralgias can be obtained even though minute doses, frequently repeated, and with short sittings, are used. They observed, even after ordinary radiography of the chest, spine and abdomen the marked amelioration of pain in cases of neuralgia of rheumatismal origin. Since then they have irradiated small fields which correspond to the nerve roots involved, using 180 kilowatts tension, 0.5 mm. of copper and 2 mm. of aluminum filtration, an intensity of 3 milliamperes and a distance of from 30 to 40 cm. Ninety-seven patients have been thus treated, without any other (internal) medication, and the results have been highly satisfactory, as shown by a tabula-

tion of their cases. This method of minute doses does not exclude the use of higher doses, which, if added, are not followed by any such exacerbation of pain as is observed when doses of medium or high intensity are employed from the beginning of the irradiation. The loss of time in using the smaller doses at first is insignificant as compared to the frequency of increased pain after initial large doses. Radiotherapy alone will not relieve all cases; hence it should be associated with anesthesia (by nerve blocking) of the nerve trunks by the paravertebral or epidural route, injection of irritants at some distance from the nerve, and the treatment of the underlying cause of the neuralgia. Coste and his associates agree with those who believe that irradiation is followed by a local alkalosis of the tissues around the inflamed nerve trunks.

In the discussion, Haguenau stated that he has always used a relatively high dosage in irradiation but that relief had been observed to follow smaller doses even at the beginning of treatment. He agreed with the authors as to the efficacy of minute doses. In the majority of cases, Haguenau has found that relief is obtained only with doses of medium intensity, it being necessary to give as much as 2,000 or 3,000 roentgens before the pain ceases. He objects to the employment of irradiation for neuralgias simultaneously with physical therapy or local injections, as Coste advocated, because one would never be able to say which of the various methods had been efficacious.

The Recent Decline in Tuberculosis Mortality

In the June 15 *Siècle médical,* Marcel Moine, statistician of the National Committee to Fight Tuberculosis, cites figures showing that there has been a marked decrease in the number of deaths from this disease. The city of Paris and the adjacent region was chosen to demonstrate this decrease, because the statistics are more accurate here than elsewhere in France, only 2 per cent of the total number of deaths being reported as "unknown." From 1895 to 1908 the mortality from tuberculosis was as high in Paris as in the surrounding territory. From 1908 to 1918 the curve for Paris showed a decline, while that for the suburbs showed a rise until 1918. This is explained by the intensive migration of city dwellers to the adjacent country from 1908 to 1918. From 1920 to 1926 the mortality in both city and suburbs was about equal. Then a decline followed for both, which has continued to such an extent that by 1940 the author believes that the mortality for Paris (195 per hundred thousand inhabitants) and for the suburban region (165 per hundred thousand) will be about equal to that of the remainder of France. These figures show that up to 1914 the mortality from tuberculosis in the Parisian suburbs was constant, and the same was approximately true for the city itself up to 1908, the average being 450 per hundred thousand. In 1935 this figure dropped to less than 200 per hundred thousand, a decrease of 55 per cent. This means on the basis of the present population of the city a saving of 9,400 lives a year, of whom 6,200 are between the ages of 20 and 50. Further curves show that the improvement is not only quantitative but also qualitative. Adolescents and adults have benefited the most by this decrease in the mortality from tuberculosis. In 1886, the group of inhabitants between the ages of 35 to 39 years showed the highest number of deaths (700 per hundred thousand). In 1911 the maximum age group was 45-49 years of age but the proportion had already dropped to 550 per hundred thousand and twenty years later (1931) it was only 255, but the age group most affected was composed of persons between 55 and 59 years. These improved statistics have been the result of a vigorous antituberculosis campaign waged since the World War in the city of Paris and its suburban territory. Moine praises the campaign that has been carried out in the United States, Holland, Great Britain and Germany since 1900. In France the decline in deaths from tuberculosis has been twice as high during the past thirteen as in the preceding thirty-five years, which is the most eloquent tribute to the value of antituberculosis efforts.

Pasteur Vallery-Radot Elected Fellow of Academy of Medicine

The distinguished internist and grandson of Pasteur was elected a fellow of the Academy of Medicine at its June 9 meeting in place of the late Professor Netter. Pasteur Vallery-Radot is associate professor in the University of Paris Medical School and attending physician to the Paris (free) hospitals. He was a pupil of the late Professor Widal, under whose supervision his first research work was undertaken. He is especially known for his study of anaphylactic shock and its relation to asthma.

Homage to the Dermatologist Professor Darier

The French Society of Dermatology and Syphilography will devote one of its coming meetings to celebrate the eightieth birthday of its internationally known member Professor Darier. A monograph by the latter on the history of dermatology during the past fifty years, which was read in abstract at the Budapest congress, will be printed and presented to Professor Darier as a token of appreciation of his distinguished services to this specialty by the society. Those who desire a copy of this monograph can obtain it by sending 30 francs to Georges Masson, Esq., 120 Boulevard St. Germain, Paris.

BERLIN

(From Our Regular Correspondent)

July 10, 1936.

Congress of the Society of Internal Medicine

As previously reported, this year's congress of the German Society of Internal Medicine began by meeting in joint session with the Nature Cure physicians. Professor Siebeck, internist, of Berlin, addressed the combined gathering on "The Treatment of Cardiac Weakness." Particular interest attaches to his lecture because of its subsequent discussion by the Nature Cure physicians. Siebeck in his opening remarks emphasized the value of a correct diagnosis as a foundation for any course of therapy. The anamnesis provides the best criterion of function, since from it the physician may ascertain whether or not the patient is equal to the demands of his daily routine. A multitude of factors are involved in the pathogenesis of heart failure and none is of greater importance than the state of blood perfusion in the coronary vessels.

The ultimate result of a course of therapy will not depend on any one medicament but on the medical supervision of the patient. There should be three stages of treatment: (1) relaxation and quieting of the patient, (2) restoration of functional capacity by exercise and added burden, (3) reintegration of the patient into his daily routine. Often hospitalization alone may satisfy all the conditions necessary for a genuine rest. Next there is the dietary regimen to be initiated; the daily fluid supply should not exceed 200 cc. five times. Important, too, is restriction of the salt intake. After such measures as rest in bed and restricted diet have been instituted, heart medicaments may be administered; but only in "critical" cases should the use of medications precede the other measures. Venesection or a mustard pack often affords some relief. Digitalis is effective only for insufficient hearts, the output of which it increases while at the same time retarding the beat. The blood perfusion is thus relatively improved. The favorable effect of digitalis is most pronounced in tachycardia. Mitral insufficiency frequently responds well to digitalis, but mitral stenosis often reacts unfavorably because of mechanical conditions and the same may be said of aortic insufficiency. Treatment with

V 107
1936

digitalis may likewise be indicated in coronary sclerosis, and hypertonia if cardiac weakness is present. The prophylactic use of digitalis prior to operations is not justified. It is better to administer the glucoside in small doses at short intervals than in one large dose. The total quantity that may be necessary, cannot be estimated a priori and must be determined by careful observation of the patient. This therapy should be supplemented by the administration of diuretics, since these exert an influence on the tissues. An acidotic condition of metabolism favors diuresis.

In the second and third phases of the planned therapy, the supply of fluid and of salt must still be held down. Two or three grams of salt may be added to the saltless regimen, but "more restricted" days should be temporarily interpolated. During the later phases exercise will assume the leading rôle together with massage, graduated respiratory exercises and gymnastics. Overexertion must be avoided. Exercise therapy should also include carbon dioxide baths.

After improvement has taken place in functional capacity, the third stage of treatment may be begun. To avoid too abrupt transition, the patient should now be placed in a work camp where he gradually may become accustomed to exertion. This is better than keeping the patient in a convalescent home, where he will probably obtain too much rest and insufficient opportunity for exercise.

Siebeck's emphasis of certain points suggests that his views do not coincide with the well known pretensions of the present government of Germany. In the discussion that followed, Katz of Stuttgart, one of the best known spokesmen of the Nature Cure group, made the forthright and emphatic declaration that, for Nature Cure therapy, a knowledge of the etiology of a disease was of slight importance. The Nature Cure treatment of heart disease consists of such measures as tapotement of the heart, massaging of the intestine, compresses on the heart and genitals and on the throat and arms, massage of the chest, as well as different types of baths and applications both morning and afternoon, and regimens of fruit juice. The foregoing sample of what took place at the joint session should furnish the reader an adequate picture of that gathering.

On the second day of the Internists' Congress proper, the topic of discussion was "Pulmonary Disorders Due to the Inhalation of Dust." Aschoff, pathologist, of Freiburg, led off with a survey of the self-purifying power of the lungs and how it acts against stone dust. Persons dwelling in large cities all become silicotic in the course of their lives. But silicosis as a disease is encountered only among workers whose occupations entail the inhalation of substantial quantities of quartz dust over a considerable period. Although soot particles are inhaled without producing any pathologic reaction, quartz dust always gives rise to pronounced reaction in the tissues. Furthermore, it is difficult to say whether a physical irritation or a chemical surface action is involved. In cases of chronic inhalation, a phagocytosis of the quartz particles may take place in the reticulo-endothelial elements of the germinating centers and particularly in the cells of the lymph sinuses of the excretory region. Quartz particles enter the blood either through the lymph stream or by the rupture of an indurated silicotic cervical lymphatic gland into a pulmonary vein or by direct absorption into the blood capillaries.

Giese of Freiburg made a talk on pulmonary disorders caused by the inhalation of dust. The action of silicic acid influences the formation of nodule-like granulation tissue and characteristic silicotic granulomas. Different types of dust are responsible for differing formations. There is a typical papular formation which is found only after the inhalation of quartz dust. Asbestos needles become completely dissolved within the organism. Sericite, clay and feldspar dusts have never been known to cause indurations. Whereas pure quartz dust in most cases enters quietly after a first reaction, a progress of the process due to the extensive formation of granulations appears if a mixture of dusts containing other soluble types is inhaled. Not all accompanying dusts aggravate the unfavorable action of the quartz dust; coal dust even appears to mitigate the effect of the quartz. Among general manifestations that occur in advanced cases of silicosis are emphysema and hypertrophy of the right side of the heart. So-called supplementary tuberculosis plays an important part in silicosis by depleting the resistance of the silicotic lung, and rapid deterioration may accordingly take place within the cavity. Endogenic reinfection also may be an important factor in the disease. In animal experimentation, tuberculosis with coexistent silicosis has been found to pursue an unfavorable course. By silicotic action in the tissues, a tuberculosis of the lymph nodes or a healed first manifestation may again be rendered active. In comparison with these internal factors in the development of tuberculosis, the external factors are of trivial importance.

A consideration of the various types of dust is likewise essential for a clinical study of dust diseases, according to another speaker, Professor Boehme of Bochum. Among the mild, nonprogressive conioses he reckons those produced by soot, pit coal, graphite, corundum, carborundum, metal dust, kaolin and ferric oxide. Siliceous dust, on the other hand, is responsible for progressive pulmonary fibrosis. If the latter condition follows the inhalation of asbestos needles, the pathogenesis may be explained as a disintegration of the pulmonary tissues by the noxious silicic acid, which substance is formed from the gradual dissolution of the asbestos particles. Boehme then specified as clinical symptoms dyspnea, emphysema and the dextro type electrocardiogram; the levo type also is encountered, however. After a ten year interval about 50 per cent of the milder cases evidence marked deterioration even when the patient has foregone his hazardous occupation. Cases of severer type silicosis are almost invariably progressive, particularly during the first years. Some 50 per cent of persons attacked die within five years. Silicosis is presented for the most part by men who have been engaged in the contaminating occupation for considerable periods; in stone cutters the disease appears after some twelve and one-half years, whereas among other workers, quartz crushers for example, it may appear as early as from one and one-half to two years after the beginning of occupational activity. An inherited predisposition may be assumed, since a high incidence has been established in a number of families. Other families, however, remain free from the disease. In view of the inability to combat silicosis, all possible prophylactic measures must be utilized. These should include examination of the applicant at the time of his employment, periodic follow-up examinations, frequent rotation of tasks, and industrial hygienic regulations.

Throughout the protracted discussion, silicosis was clinically considered not as a purely organic disorder but as a disease of the entire organism. Schlomka of Bonn pointed out the obvious influence of silicosis on nutrition; examination of 1,500 stone cutters disclosed a tendency to take on fat to be an indication of the disease and a result of the action of the noxious dust.

On the third day, Fritz Schellong of Heidelberg submitted a paper on "Electrocardiographic Diagnoses in Disturbances of the Heart Muscle." The speaker described a new procedure that helps determine the electrical axis of the heart by direct registration of changes during the heart beat. A "vectorgram" is obtained from which it is possible to establish axile alterations. A spatial vectorgram may also be composed by biplanar exposure and in this way it is possible to correlate different parts of the leg with the activity of particular regions of the heart muscle. Pathologic changes in separate regions can thus

be plainly represented and a functional diagnosis made. Schellong reaches the conclusion that, according to the sum of clinical electrocardiographic aspects, similar changes in the electrocardiogram may be interpreted in wholly divergent ways. The discussion of this report elicited numerous important details.

Of the other papers, which were concerned with the most diverse questions, a few may be briefly mentioned. Pannhorst of Greifswald has found that the following determination with regard to conjugal diabetes sheds light on the question of the hereditability of that disease: If two parents are afflicted with diabetes or if one parent is so afflicted and the other possesses a familial predisposition toward the disease, 15 per cent of the descendants will present diabetes, whereas if the disease is present in but one parent, only 1.5 per cent of the descendants will be afflicted.

Gänsslen of Tübingen spoke on his treatment of pernicious anemia: By the administration of from two to four standard ampule injections of liver extract he was able completely to rehabilitate a severely anemic hemogram within a period of from six to ten weeks. By the use of this small and infrequent dosage he had achieved favorable results in twenty-one cases. This proves that for many patients the more frequent injections are unnecessary. Besides, the use of this method effects an extraordinary reduction in the cost of treatment. Gänsslen found that precisely the most severe anemias react favorably to small doses of extract. A single injection must needs produce a decided change in the blood formation and this fact is a useful criterion whether or not the extract is effective. A second injection is administered when the increased hemoglobin content has again become stationary.

The internists concluded their congress by participation in the convention of the German Roentgen Society.

ITALY

(From Our Regular Correspondent)

July 15, 1936.

Sanitation in Ethiopia

The public health office now organized in Italian Addis Ababa is provided with chemical and bacteriologic laboratories and offices for administration of supplies to be used in work of sanitation and prevention of diseases. Hygiene and sanitation, all through the country, is supervised by the personnel of the public health office. Addis Ababa is considered as if divided into several zones, each of which is in charge of a physician assisted by a veterinary. The capital of the empire has a special department of hygiene which is in connection with a hospital for isolation of cases of contagious diseases, branches for the improvement of hygiene of the soil and squads of Italian sanitarians and of Italians and natives working on disinfection and vaccination. The Menelik Hospital, with all its departments, is now a hospital for isolation of patients suffering from infectious diseases. A central post for first aid, a department for obstetrics and municipal outpatient hospitals in connection with antisyphilitic and antituberculous dispensaries have been established. The ex-Swedish Hospital as well as the hospital which was formerly in the hands of the members of the British military ambulances has been placed in the hands of the board of directors of military sanitation. The Fulut Naka and Gullale hospitals and the Sudan Interior Mission, the American leprosarium, all of which have been managed by American missions, are authorized to continue functioning, with the collaboration of the public health department. Groups for detection and treatment of patients suffering from infectious diseases are now in organization. Regulations have been provided making free the administration of treatments in cases of snake bites and compulsory free vaccination and also for the conservation of hygiene of the soil, housing, food, water, milk, live stock and market meat supply. Antityphoid vaccination is compulsory for the lower ranks of soldiers. The prevention and control of malaria and tuberculosis, the care of the insane, the production and distribution of vaccines, the supervision of hygiene and sanitation at the borders and the practice of pharmacy are problems that will be given attention in the near future.

The Riberi Prize

The Riberi prize is given for the best contribution to the progress of medicine during each period of five years. The prize was recently awarded to Francesco Pentinalli, professor of general pathology at the University of Florence, for his work on experimental tumors and cancer. The articles submitted numbered 275 and were written by thirty-eight aspirants from nine different countries.

Society Reunion

The first national congress of the Società di Antropologia e Psicologia Criminale was recently held at Rome. S. E. Novelli spoke on the satisfactory results obtained by the institutions for prevention and punishment of delinquency in reeducating and socially readapting delinquents. A complete actuation of the new penal laws has been made possible through the collaboration of magistrates and persons devoted to the scientific prevention and control of delinquency.

Fabbri spoke on the advisability of establishing offices for medicopedagogic consultations of children between the ages of 6 and 12 who at home or in school show antisocial and delinquent tendencies. A function of these offices will be the physical and moral guidance of those children.

Professor Falco spoke on the importance of the preservation of the biographic records of delinquents in the police department and on the signficance of the records for application of the new penal laws, owing to the fact that the personality of delinquents should be known for evaluation of the offense. That biographic records require the clinical study of the delinquents in the given case points to the advisability of having physicians who have specialized in criminal anthropology in the police department.

Professor Ovio-Ciancarini spoke on the technical and scientific procedures used for prevention and control of delinquency in soldiers. The sojourn of delinquents in special centers for readaptation and reeducation has given satisfactory results.

Reunion of Gastro-Enterologists

The Società di Gastro-Enterologia met recently at Rome. Dr. Valdoni reported results of studies on the stomach after an operation. His studies prove that periodic contraction almost disappears following gastric resection, while it is preserved almost without change following gastro-enterostomy. The changes of the secretory functions are manifest, especially if the examination is made some time after the operation. Following resection, the gastric secretion is hypo-acid and sometimes there is anachlorhydria. If a patient suffering from postresectional anachlorhydria is given 200 Gm. of wine and a regular portion of oatmeal, the stomach reacquires the capacity of secreting hydrochloric acid. Together with the increase of hydrochloric acid in the gastric secretion, a bacterial flora appears in the gastric juice. The speaker verified the presence of bacteria in 60 per cent of the cases in which before administration of wine and oatmeal there was a sterile gastric juice.

Dr. Meldolesi spoke on the rôle of an insufficiency of pancreas in the development of progressive muscular dystrophy. According to the speaker the disease originates in the lack, in the body, of certain substances that are required for maintenance of the trophic conditions of the muscles and that normally originate in food products after the processes of pancreatic digestion.

V 107
1936

Marriages

ALEXANDER VICTOR LYMAN, New York, to Mrs. Elizabeth Gilbert Forsyth of Swampscott, Mass., at Princeton, N. J., in July.

EDWIN LOUIS LANDRY, De Quincy, La., to Miss Edna Lee Elberson of Lafayette in June.

JOHN G. LOHMANN to Miss Anastasia Hodgson, both of Fergus Falls, Minn., in June.

WILEY E. LINDSAY to Miss Ruby Eva Tallant, both of Winchester, Tenn., in July.

MARION AUSTIN LOVEJOY to Miss Doris Olive Petit, both of Miami, Fla., June 16.

Deaths

Thomas Beaver Holloway ✠ professor of ophthalmology at the University of Pennsylvania School of Medicine, Philadelphia, and professor of ophthalmology and formerly vice dean at the graduate school of medicine, died, August 18, at his home in Merion Station, Pa., aged 64. Dr. Holloway was born at Danville, Pa., March 24, 1872. He received a bachelor of science degree from Lafayette College in Easton, Pa., in 1894, and a master of science in 1897, in which year he also received a medical degree from the University of Pennsylvania Department of Medicine. He was a past president and from 1918 to 1925 was secretary-treasurer of the American Ophthalmological Society and at one time edited the society's transactions; past president of the section on ophthalmology of the Pan-American Medical Association; a member of the American Academy of Ophthalmology and Oto-Laryngology, the Société française d'ophthalmologie and the Ophthalmological Society of the United Kingdom as well as numerous other ophthalmologic, neurologic, pathologic and general medical societies in this country. In 1918 he was a member of the House of Delegates of the American Medical Association, and chairman of the Section on Ophthalmology from 1929 to 1930. He had been associated with the Wills Eye Hospital, was ophthalmologic surgeon at the University of Pennsylvania Hospital, consulting ophthalmologist to the neurologic department of Philadelphia General Hospital and ophthalmologist to the Pennsylvania Institution for the Instruction of the Blind, Overbrook. In 1926 he was awarded an honorary doctor of science degree by the University of Pennsylvania and in 1932 was elected a member of the board of directors of the National Society for the Prevention of Blindness. Dr. Holloway was co-author, with Dr. George E. de Schweinitz, of "Pulsating Exophthalmos" in 1908, and contributed numerous articles to the periodical literature.

Charles Gilbert Chaddock ✠ St. Louis; emeritus professor of neurology and psychiatry, St. Louis University School of Medicine, died, July 20, at the Central Hospital, of diabetes mellitus, aged 74. Dr. Chaddock was born in Jonesville, Mich., Nov. 14, 1861. He received his medical degree from the University of Michigan Department of Medicine and Surgery, Ann Arbor, in 1885, and later took postgraduate studies at the University of Munich and at hospitals of Paris. During the years 1888 and 1889, Dr. Chaddock resided in Germany, and in France, from 1896 to 1900. From 1889 to 1892 he was an assistant medical superintendent at the Northern Michigan Asylum, now known as the Newberry (Mich.) State Hospital. In 1892 he became professor of nervous diseases at the Marion-Sims-Beaumont Medical College, now known as St. Louis University School of Medicine. He was secretary of the Section on Physiology and Dietetics of the American Medical Association from 1894 to 1895; was a life fellow of the American Psychiatric Association, and visiting neurologist at St. Louis City hospitals. Dr. Chaddock devised a method of physical examination for lesions of the corticospinal reflex paths whereby irritating the skin in the external malleolar regions produces extension of the toes, which has become known as the Chaddock sign. He translated "Psychopathia Sexualis" (Krafft-Ebing) 1892, and "Suggestive Therapeutics" (von Schrenck-Notzing) 1895; was the author of "Outline of Psychiatry," and "Sexual Crimes," and chapters in Hamilton and Godkin's "A System of Legal Medicine," and Peterson, Haines and Webster's "Legal Medicine and Toxicology."

Harry Coulter Todd, Oklahoma City; Medical School of Maine, Portland, 1900; a practitioner in Oklahoma City since 1903; member of the Oklahoma State Medical Association; past president of the Oklahoma County Medical Society; professor of anatomy and secretary of the faculty, from 1904 to 1907, and associate professor of eye, ear, nose and throat from 1907 to 1910 at the Epworth College of Medicine, which later became the clinical department of the University of Oklahoma School of Medicine, where he was an associate professor and later professor of otology, rhinology and laryngology; fellow of the American College of Surgeons; member of the staffs of the State University and St. Anthony's hospitals and the Oklahoma State Baptist Orphans' Home; in addition to being associated with Dr. E. B. Gleason in the latest edition of "Nose, Throat and Ear Manual," was the author of many monographs as well as books of poems; aged 62; died, June 25, of cerebral hemorrhage.

Henry Leander Bernardy, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1902; member of the Medical Society of the State of Pennsylvania; an assistant on the dermatologic staff of Jefferson Hospital from 1905 to 1912, and formerly in the department of proctology at the Graduate School of Medicine of the University of Pennsylvania; aged 59; died, June 30, of coronary occlusion, arteriosclerosis and nephritis.

William Henry O'Connor ✠ Passed Assistant Surgeon, Lieut. Commander, U. S. Navy, retired, Washington, D. C.; Tufts College Medical School, Boston, 1916; entered the navy in 1920; retired in 1931 for incapacity resulting from an incident of service; retired with rank of next higher grade to that held on active list; aged 45; died, May 16, in the U. S. Naval Hospital of coronary thrombosis.

Harry Beecher Baker, Taunton, Mass.; Jefferson Medical College of Philadelphia, 1880; member of the Massachusetts Medical Society and the American Academy of Ophthalmology and Oto-Laryngology; formerly member of the board of health and secretary of the school board of Dighton; consultant to the Morton and Taunton state hospitals; aged 77; died, June 7, of arteriosclerosis.

Willard Springer, Wilmington, Del.; University of Pennsylvania Department of Medicine, Philadelphia, 1874; member of the House of Delegates of the American Medical Association in 1902 and in 1917; member and past president of the Medical Society of Delaware, and the New Castle County Medical Society; on the staff of the Delaware Hospital; aged 84; died, June 26.

William Lane Buhrman ✠ Chicago; University of Illinois College of Medicine, Chicago, 1923; member of the American Academy of Pediatrics; clinical instructor in pediatrics, Rush Medical College; assistant attending pediatrician to the Presbyterian and Chicago Memorial hospitals; aged 39; died, June 10, of coronary thrombosis and arteriosclerosis.

Fount Willard Huddleston, Liberal, Kan.; Hospital College of Medicine, Louisville, Ky., 1906; member of the Kansas Medical Society; fellow of the American College of Surgeons; past president of the Meade-Seward County Medical Society; a founder of the Epworth Hospital; aged 53; died, June 5, of erysipelas and acute nephritis.

George Elmer Malsbary, Los Angeles; Medical College of Ohio, Cincinnati, 1896; at one time a practitioner in Cincinnati, Ohio; formerly assistant to the chair of practice at his alma mater and instructor of medicine, University of California Medical Department; aged 62; died, May 25, of coronary thrombosis.

Payson La Vern Nusbaum, Chicago; Northwestern University Medical School, Chicago, 1911; fellow of the American College of Surgeons; served during the World War; associate in gynecology at his alma mater; aged 57; on the staff of the Wesley Memorial Hospital, where he died, July 28.

John Duncan Bonnar, Buffalo; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1878; M.B. Trinity Medical College, Toronto, 1878, and M.D., in 1879; member of the Medical Society of the State of New York; aged 84; died, June 24, of cardiac insufficiency.

Joe C. Ambrister, Chickasha, Okla.; Washington University School of Medicine, St. Louis, 1905; member of the Oklahoma State Medical Association; past president and secretary of the Grady County Medical Society; formerly on the staff of the Chickasha Hospital; aged 53; died, June 29.

Joseph Franklin Jenckes, Wrentham, Mass.; University of Vermont College of Medicine, Burlington, 1882; member of the school committee, and board of health; chairman of the board of trustees of the Fiske Public Library; aged 88; died, May 18, in Providence, R. I.

be plainly represented and a functional diagnosis made. Schellong reaches the conclusion that, according to the sum of clinical electrocardiographic aspects, similar changes in the electrocardiogram may be interpreted in wholly divergent ways. The discussion of this report elicited numerous important details.

Of the other papers, which were concerned with the most diverse questions, a few may be briefly mentioned. Pannhorst of Greifswald has found that the following determination with regard to conjugal diabetes sheds light on the question of the hereditability of that disease: If two parents are afflicted with diabetes or if one parent is so afflicted and the other possesses a familial predisposition toward the disease, 15 per cent of the descendants will present diabetes, whereas if the disease is present in but one parent, only 1.5 per cent of the descendants will be afflicted.

Gänsslen of Tübingen spoke on his treatment of pernicious anemia: By the administration of from two to four standard ampule injections of liver extract he was able completely to rehabilitate a severely anemic hemogram within a period of from six to ten weeks. By the use of this small and infrequent dosage he had achieved favorable results in twenty-one cases. This proves that for many patients the more frequent injections are unnecessary. Besides, the use of this method effects an extraordinary reduction in the cost of treatment. Gänsslen found that precisely the most severe anemias react favorably to small doses of extract. A single injection must needs produce a decided change in the blood formation and this fact is a useful criterion whether or not the extract is effective. A second injection is administered when the increased hemoglobin content has again become stationary.

The internists concluded their congress by participation in the convention of the German Roentgen Society.

ITALY

(From Our Regular Correspondent)

July 15, 1936.

Sanitation in Ethiopia

The public health office now organized in Italian Addis Ababa is provided with chemical and bacteriologic laboratories and offices for administration of supplies to be used in work of sanitation and prevention of diseases. Hygiene and sanitation, all through the country, is supervised by the personnel of the public health office. Addis Ababa is considered as if divided into several zones, each of which is in charge of a physician assisted by a veterinary. The capital of the empire has a special department of hygiene which is in connection with a hospital for isolation of cases of contagious diseases, branches for the improvement of hygiene of the soil and squads of Italian sanitarians and of Italians and natives working on disinfection and vaccination. The Menelik Hospital, with all its departments, is now a hospital for isolation of patients suffering from infectious diseases. A central post for first aid, a department for obstetrics and municipal outpatient hospitals in connection with antisyphilitic and antituberculous dispensaries have been established. The ex-Swedish Hospital as well as the hospital which was formerly in the hands of the members of the British military ambulances has been placed in the hands of the board of directors of military sanitation. The Fulut Naka and Gullale hospitals and the Sudan Interior Mission, the American leprosarium, all of which have been managed by American missions, are authorized to continue functioning, with the collaboration of the public health department. Groups for detection and treatment of patients suffering from infectious diseases are now in organization. Regulations have been provided making free the administration of treatments in cases of snake bites and compulsory free vaccination and also for the conservation of hygiene of the soil, housing, food, water, milk, live stock and market meat supply. Antityphoid vaccination is compulsory for the lower ranks of soldiers. The prevention and control of malaria and tuberculosis, the care of the insane, the production and distribution of vaccines, the supervision of hygiene and sanitation at the borders and the practice of pharmacy are problems that will be given attention in the near future.

The Riberi Prize

The Riberi prize is given for the best contribution to the progress of medicine during each period of five years. The prize was recently awarded to Francesco Pentinalli, professor of general pathology at the University of Florence, for his work on experimental tumors and cancer. The articles submitted numbered 275 and were written by thirty-eight aspirants from nine different countries.

Society Reunion

The first national congress of the Società di Antropologia e Psicologia Criminale was recently held at Rome. S. E. Novelli spoke on the satisfactory results obtained by the institutions for prevention and punishment of delinquency in reeducating and socially readapting delinquents. A complete actuation of the new penal laws has been made possible through the collaboration of magistrates and persons devoted to the scientific prevention and control of delinquency.

Fabbri spoke on the advisability of establishing offices for medicopedagogic consultations of children between the ages of 6 and 12 who at home or in school show antisocial and delinquent tendencies. A function of these offices will be the physical and moral guidance of those children.

Professor Falco spoke on the importance of the preservation of the biographic records of delinquents in the police department and on the significance of the records for application of the new penal laws, owing to the fact that the personality of delinquents should be known for evaluation of the offense. That biographic records require the clinical study of the delinquents in the given case points to the advisability of having physicians who have specialized in criminal anthropology in the police department.

Professor Ovio-Ciancarini spoke on the technical and scientific procedures used for prevention and control of delinquency in soldiers. The sojourn of delinquents in special centers for readaptation and reeducation has given satisfactory results.

Reunion of Gastro-Enterologists

The Società di Gastro-Enterologia met recently at Rome. Dr. Valdoni reported results of studies on the stomach after an operation. His studies prove that periodic contraction almost disappears following gastric resection, while it is preserved almost without change following gastro-enterostomy. The changes of the secretory functions are manifest, especially if the examination is made some time after the operation. Following resection, the gastric secretion is hypo-acid and sometimes there is anachlorhydria. If a patient suffering from postresectional anachlorhydria is given 200 Gm. of wine and a regular portion of oatmeal, the stomach reacquires the capacity of secreting hydrochloric acid. Together with the increase of hydrochloric acid in the gastric secretion, a bacterial flora appears in the gastric juice. The speaker verified the presence of bacteria in 60 per cent of the cases in which before administration of wine and oatmeal there was a sterile gastric juice.

Dr. Meldolesi spoke on the rôle of an insufficiency of pancreas in the development of progressive muscular dystrophy. According to the speaker the disease originates in the lack, in the body, of certain substances that are required for maintenance of the trophic conditions of the muscles and that normally originate in food products after the processes of pancreatic digestion.

V 10
1936

Marriages

ALEXANDER VICTOR LYMAN, New York, to Mrs. Elizabeth Gilbert Forsyth of Swampscott, Mass., at Princeton, N. J., in July.

EDWIN LOUIS LANDRY, De Quincy, La., to Miss Edna Lee Elberson of Lafayette in June.

JOHN G. LOHMANN to Miss Anastasia Hodgson, both of Fergus Falls, Minn., in June.

WILEY E. LINDSAY to Miss Ruby Eva Tallant, both of Winchester, Tenn., in July.

MARION AUSTIN LOVEJOY to Miss Doris Olive Petit, both of Miami, Fla., June 16.

Deaths

Thomas Beaver Holloway ✠ professor of ophthalmology at the University of Pennsylvania School of Medicine, Philadelphia, and professor of ophthalmology and formerly vice dean at the graduate school of medicine, died, August 18, at his home in Merion Station, Pa., aged 64. Dr. Holloway was born at Danville, Pa., March 24, 1872. He received a bachelor of science degree from Lafayette College in Easton, Pa., in 1894, and a master of science in 1897, in which year he also received a medical degree from the University of Pennsylvania Department of Medicine. He was a past president and from 1918 to 1925 was secretary-treasurer of the American Ophthalmological Society and at one time edited the society's transactions; past president of the section on ophthalmology of the Pan-American Medical Association; a member of the American Academy of Ophthalmology and Oto-Laryngology, the Société française d'ophthalmologie and the Ophthalmological Society of the United Kingdom as well as numerous other ophthalmologic, neurologic, pathologic and general medical societies in this country. In 1918 he was a member of the House of Delegates of the American Medical Association, and chairman of the Section on Ophthalmology from 1929 to 1930. He had been associated with the Wills Eye Hospital, was ophthalmologic surgeon at the University of Pennsylvania Hospital, consulting ophthalmologist to the neurologic department of Philadelphia General Hospital and ophthalmologist to the Pennsylvania Institution for the Instruction of the Blind, Overbrook. In 1926 he was awarded an honorary doctor of science degree by the University of Pennsylvania and in 1932 was elected a member of the board of directors of the National Society for the Prevention of Blindness. Dr. Holloway was co-author, with Dr. George E. de Schweinitz, of "Pulsating Exophthalmos" in 1908, and contributed numerous articles to the periodical literature.

Charles Gilbert Chaddock ✠ St. Louis; emeritus professor of neurology and psychiatry, St. Louis University School of Medicine, died, July 20, at the Central Hospital, of diabetes mellitus, aged 74. Dr. Chaddock was born in Jonesville, Mich., Nov. 14, 1861. He received his medical degree from the University of Michigan Department of Medicine and Surgery, Ann Arbor, in 1885, and later took postgraduate studies at the University of Munich and at hospitals of Paris. During the years 1888 and 1889, Dr. Chaddock resided in Germany, and in France, from 1896 to 1900. From 1889 to 1892 he was an assistant medical superintendent at the Northern Michigan Asylum, now known as the Newberry (Mich.) State Hospital. In 1892 he became professor of nervous diseases at the Marion-Sims-Beaumont Medical College, now known as St. Louis University School of Medicine. He was secretary of the Section on Physiology and Dietetics of the American Medical Association from 1894 to 1895; was a life fellow of the American Psychiatric Association, and visiting neurologist at St. Louis City hospitals. Dr. Chaddock devised a method of physical examination for lesions of the corticospinal reflex paths whereby irritating the skin in the external malleolar regions produces extension of the toes, which has become known as the Chaddock sign. He translated "Psychopathia Sexualis" (Krafft-Ebing) 1892, and "Suggestive Therapeutics" (von Schrenck-Notzing) 1895; was the author of "Outline of Psychiatry," and "Sexual Crimes," and chapters in Hamilton and Godkin's "A System of Legal Medicine," and Peterson, Haines and Webster's "Legal Medicine and Toxicology."

Harry Coulter Todd, Oklahoma City; Medical School of Maine, Portland, 1900; a practitioner in Oklahoma City since 1903; member of the Oklahoma State Medical Association; past president of the Oklahoma County Medical Society; professor of anatomy and secretary of the faculty, from 1904 to 1907, and associate professor of eye, ear, nose and throat from 1907 to 1910 at the Epworth College of Medicine, which later became the clinical department of the University of Oklahoma School of Medicine, where he was an associate professor and later professor of otology, rhinology and laryngology; fellow of the American College of Surgeons; member of the staffs of the State University and St. Anthony's hospitals and the Oklahoma State Baptist Orphans' Home; in addition to being associated with Dr. E. B. Gleason in the latest edition of "Nose, Throat and Ear Manual," was the author of many monographs as well as books of poems; aged 62; died, June 25, of cerebral hemorrhage.

Henry Leander Bernardy, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1900; member of the Medical Society of the State of Pennsylvania; an assistant on the dermatologic staff of Jefferson Hospital from 1905 to 1912, and formerly in the department of proctology at the Graduate School of Medicine of the University of Pennsylvania; aged 59; died, June 30, of coronary occlusion, arteriosclerosis and nephritis.

William Henry O'Connor ✠ Passed Assistant Surgeon, Lieut. Commander, U. S. Navy, retired, Washington, D. C.; Tufts College Medical School, Boston, 1916; entered the navy in 1920; retired in 1931 for incapacity resulting from an incident of service; retired with rank of next higher grade to that held on active list; aged 45; died, May 16, in the U. S. Naval Hospital of coronary thrombosis.

Harry Beecher Baker, Taunton, Mass.; Jefferson Medical College of Philadelphia, 1880; member of the Massachusetts Medical Society and the American Academy of Ophthalmology and Oto-Laryngology; formerly member of the board of health and secretary of the school board of Dighton; consultant to the Morton and Taunton state hospitals; aged 77; died, June 7, of arteriosclerosis.

Willard Springer, Wilmington, Del.; University of Pennsylvania Department of Medicine, Philadelphia, 1874; member of the House of Delegates of the American Medical Association in 1902 and in 1917; member and past president of the Medical Society of Delaware, and the New Castle County Medical Society; on the staff of the Delaware Hospital; aged 84; died, June 26.

William Lane Buhrman ✠ Chicago; University of Illinois College of Medicine, Chicago, 1923; member of the American Academy of Pediatrics; clinical instructor in pediatrics, Rush Medical College; assistant attending pediatrician to the Presbyterian and Chicago Memorial hospitals; aged 39; died, June 10, of coronary thrombosis and arteriosclerosis.

Fount Willard Huddleston, Liberal, Kan.; Hospital College of Medicine, Louisville, Ky., 1906; member of the Kansas Medical Society; fellow of the American College of Surgeons; past president of the Meade-Seward County Medical Society; a founder of the Epworth Hospital; aged 53; died, June 5, of erysipelas and acute nephritis.

George Elmer Malsbary, Los Angeles; Medical College of Ohio, Cincinnati, 1896; at one time a practitioner in Cincinnati, Ohio; formerly assistant to the chair of practice at his alma mater and instructor of medicine, University of California Medical Department; aged 62; died, May 25, of coronary thrombosis.

Payson La Vern Nusbaum, Chicago; Northwestern University Medical School, Chicago, 1911; fellow of the American College of Surgeons; served during the World War; associate in gynecology at his alma mater; aged 57; on the staff of the Wesley Memorial Hospital, where he died, July 28.

John Duncan Bonnar, Buffalo; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1878; M.B. Trinity Medical College, Toronto, 1878, and M.D., in 1879; member of the Medical Society of the State of New York; aged 84; died, June 24, of cardiac insufficiency.

Joe C. Ambrister, Chickasha, Okla.; Washington University School of Medicine, St. Louis, 1905; member of the Oklahoma State Medical Association; past president and secretary of the Grady County Medical Society; formerly on the staff of the Chickasha Hospital; aged 53; died, June 29.

Joseph Franklin Jenckes, Wrentham, Mass.; University of Vermont College of Medicine, Burlington, 1882; member of the school committee, and board of health; chairman of the board of trustees of the Fiske Public Library; aged 88; died, May 18, in Providence, R. I.

Charles Hendry Shivers, Atlantic City, N. J.; Jefferson Medical College of Philadelphia, 1872; member of the Medical Society of New Jersey; past president of the Camden County Medical Society; aged 88; died, June 28, of pneumonia, following a fractured femur.

Charles Edward Johnston, Portsmouth, N. H.; Dartmouth Medical School, Hanover, 1897; member of the New Hampshire Medical Society; served during the World War; formerly member of the City Council; aged 71; died, June 28, of coronary sclerosis.

Dillis Sidney Conner ✠ Cannelton, Ind.; Louisville (Ky.) Medical College, 1905; secretary of the Perry County Medical Society; county health officer; aged 54; died, June 25, in the Protestant Deaconess Hospital, Evansville, following an operation for appendicitis.

Elliott Coues Prentiss, El Paso, Texas; Columbian University Medical Department, Washington, D. C., 1900; member of the State Medical Association of Texas; aged 59; died, May 4, in a local hospital, of pneumonia, following a prostatectomy.

Trenouth Wright Edmonds ✠ Horton, Kan.; Northwestern University Medical School, Chicago, 1929; on the staff of the Horton Hospital; aged 32; was accidentally electrocuted, June 8, when he fell against the high tension wires of an x-ray machine.

George W. Barnes, Springfield, Mo.; Missouri Medical College, St. Louis, 1884; member of the Missouri State Medical Association; aged 81; died, June 9, as the result of a fractured tibia sustained when he was struck by an automobile, and senility.

William Worrall Reber, Baldwin Park, Calif.; University of Pennsylvania Department of Medicine, Philadelphia, 1879; at one time postmaster in Leighton, Pa.; aged 80; died, May 4, of chronic myocarditis, nephritis and arteriosclerosis.

Dennis Leo Black, Lawrence, Mass.; Dartmouth Medical School, Hanover, N. H., 1910; served during the World War; on the staff of the Veterans Administration, Boston; aged 53; died suddenly, June 4, of coronary occlusion.

Sherman Willard Boone, Presque Isle, Maine; McGill University Faculty of Medicine, Montreal, Que., Canada, 1887; fellow of the American College of Surgeons; aged 76; died, May 27, of uremia, following myocarditis.

Heber Howe Cleveland, Portland, Maine; Harvard University Medical School, Boston, 1899; formerly member of the school board; aged 63; died, June 17, in Springfield, Mass., of coronary thrombosis and arteriosclerosis.

Horace Osler Averitt, Fayetteville, N. C.; Emory University School of Medicine, Atlanta, 1929; member of the Medical Society of the State of North Carolina; aged 32; died, June 29, of acute dilatation of the heart.

Joseph Maxwell Cadwallader, Sheffield, Iowa; State University of Iowa College of Medicine, Iowa City, 1907; member of the Iowa State Medical Society; aged 52; died, May 23, of an accidental overdose of barbital.

Thomas Henry Toynbee Wight, Carmel, Calif.; Harvard University Medical School, Boston, 1901; veteran of the Spanish-American and World wars; aged 65; died, May 11, of bronchopneumonia and arteriosclerosis.

Giles Ripley Pease, Los Angeles; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1885; formerly a practitioner in Redwood Falls, Minn.; aged 78; died, May 27, of gastric hemorrhage.

Horace Bernard Blan, Brooklyn; New York University Medical College, 1898; aged 59; formerly on the staff of the Kings County Hospital where he died, June 16, of carcinoma of the bladder with metastases.

Morton Myers, Akiak, Alaska; State College of Physicians and Surgeons, Indianapolis, 1907; physician for the U. S. Bureau of Indian Affairs; aged 63; died, May 27, in Anchorage, of intestinal obstruction.

George Edwin Cook, St. Louis; St. Louis College of Physicians and Surgeons, 1905; member of the Missouri State Medical Association; aged 61; died, June 19, in the Deaconess Hospital, of cirrhosis of the liver.

Robert Breckenridge Elderdice, McKnightstown, Pa.; Cincinnati College of Medicine and Surgery, 1868; Civil War veteran; aged 89; died, June 28, of carcinoma of the liver and chronic myocarditis.

Austin Lynn Braden, Wellman, Iowa; State University of Iowa College of Medicine, Iowa City, 1903; member of the Iowa State Medical Society; aged 65; died suddenly, June 22, of heart disease.

Daniel G. Cook, Holland, Mich.; Detroit College of Medicine, 1894; formerly health officer, city physician and county coroner; aged 71; died, June 6, of chronic myocarditis and arteriosclerosis.

Archibald Benjamin Morrison, Brookline, Mass.; College of Physicians and Surgeons, Baltimore, 1906; member of the Massachusetts Medical Society; aged 72; died, May 3, of coronary thrombosis.

John Sinclair Miller, Hugo, Okla.; University of Texas School of Medicine, Galveston, 1903; member of the Oklahoma State Medical Association; aged 59; died, May 4, of cerebral hemorrhage.

James Renwick Gormley, Monaca, Pa.; Miami Medical College, Cincinnati, 1893; member of the Medical Society of the State of Pennsylvania; aged 67; died, May 21, of pulmonary embolism.

Benjamin Lynn Bridges, Ellaville, Ga.; Atlanta Medical College, 1895; member of the Medical Association of Georgia; aged 62; died, June 24, of typhus fever, pneumonia and acute nephritis.

Frank M. Bell, Portland, Ore.; Miami Medical College, Cincinnati, 1883; aged 80; died, May 7, in the Multnomah Hospital of bronchopneumonia, arteriosclerosis and nephrolithiasis.

Joseph A. Lucas, Sullivan, Ill.; St. Louis College of Physicians and Surgeons, 1899; for many years county physician; aged 71; died, May 18, of mitral insufficiency and angina pectoris.

Harry Newton Kierulff, San Francisco, Calif.; State University of Iowa College of Medicine, Iowa City, 1892; aged 72; died, May 28, of chronic myocarditis and hypertension.

Howard Julian Lackey ✠ Oakland, Calif.; Hahnemann Medical College and Hospital of Philadelphia, 1899; aged 62; died, May 15, in the Peralta Hospital, of heart disease.

John Wilson Morrow, Marchand, Pa.; Jefferson Medical College of Philadelphia, 1875; formerly member of the state legislature; aged 87; died, May 30, of nephritis.

Alfred Elder, Falls City, Neb.; Northwestern Medical College, St. Joseph, Mo., 1888; aged 94; died, May 22, of injuries received when he was struck by an automobile.

William M. Thomas, Fort Worth, Texas; St. Louis College of Physicians and Surgeons, 1891; aged 74; died, May 3, of infected thrombosis and ulcer of the nose.

Phillip James Shaver, San Antonio, Texas; University of Texas School of Medicine, Galveston, 1904; aged 58; died in May of pulmonary tuberculosis and nephritis.

Buford Munsey Tittsworth, Jefferson City, Tenn.; Baltimore Medical College, 1897; served during the World War; aged 64; died, May 11, of pneumonia.

Egbert H. Relyea, New York; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1907; aged 63; died, May 14, of chronic myocarditis.

Carrie E. Marvin Leiberg, Oakland, Calif.; Woman's Medical College, Chicago, 1882; aged 84; died, May 26, of chronic myocarditis and nephritis.

Robert Ernest Pierce, Los Gatos, Calif.; Boston University School of Medicine, 1879; aged 79; died, May 22, of cardiac decompensation and myocarditis.

Luther Calvin Havice, Klingerstown, Pa.; Jefferson Medical College of Philadelphia, 1893; aged 66; died, May 4, of acute dilatation of the heart.

Charles C. Ramsey, Baltimore; North Carolina Medical College, Charlotte, 1907; aged 51; died, May 10, of carbon monoxide poisoning.

Sarah Van Gorden, Cincinnati; Pulte Medical College, Cincinnati, 1903; aged 62; died, May 19, of cerebral embolism and myocarditis.

James Lincoln Randall, Hattiesburg, Miss.; Leonard Medical School, Raleigh, 1908; aged 56; died suddenly, May 13, of myocarditis.

Sarah J. Bebout, Norwalk, Ohio; Pulte Medical College, Cincinnati, 1882; aged 85; died, May 25, of chronic myocarditis.

James R. Robertson, Columbia, Miss. (licensed in Mississippi in 1908); aged 73; died, in May, of cerebral hemorrhage.

Sylvester Nash Young, Ridgetown, Ont., Canada; Victoria University Medical Department, Coburg, 1888; died, May 19.

Joseph McAndrew, Georgetown, Ont., Canada; University of Toronto Faculty of Medicine, 1905; aged 59; died, May 15.

Andrew Jackson Baker, Monrovia, Calif.; Omaha Medical College, 1892; aged 76; died, May 5, of heart disease.

V 10
1936

Correspondence

HEALTH INSURANCE

To the Editor:—It is to be regretted that the words "health insurance" have been so widely applied to plans that have had nothing to do with health and insure little except against monetary risks of unemployment produced by disease or accident. The real insurance of health to the individual and the community is something entirely different from the balancing of probabilities by the statistics of the actuary, to get a profit for the promoters of a special productive scheme for insurance, who embark in speculation by writing "insurance" on the chances of human death or disability. The report on the "costs of medical care" was more clearly a movement in the field of finance. It was an exploration to find whether some of the income of the medical profession might be diverted to the profit of a new business enterprise offering "medical care" to a larger number of customers.

However, the insurance of health, to the individual and the community, is one of the greatest enterprises that is opening up to the civilizing races of the world. Italy has driven out the emperor of Ethiopia, but can the Italian people exterminate the tropical diseases as easily as they can kill off the savage tribes, which have become partly immune to those diseases. The future of empire and world dominance hangs on the establishing of real health insurance. This will require the growth of knowledge and development of customs that will overcome the dangers of destructive disease and establish a vast resource of race health. Only on this can empire builders rely for the success of their great undertakings. The words "health insurance" have recently occupied a commanding place in medical journals and popular magazines. They should be given a new, real and more important meaning than they have carried in the past.

To insure individual and race health has been, and still will be, the great work of the medical profession. Chance to speculate or make investments in the prospects of health or disease for the people may still be attractive to promoters and financiers, but the need to secure and preserve health is a permanent need for every member of the human race. It has been the real objective of the medical profession. Its importance increases with the discoveries of science and the experiences of individual living. The medical profession must give fresh thought and renewed attention to this greatest department of its labors, the most productive and honorable of its responsibilities.

The most important opportunities for teaching health come to the general physician, with each patient recovering from sickness. The child getting over an attack of indigestion or a cold can understand the good of avoiding such experiences in the future. The developing youth or business man is anxious to escape recurrences of periods of disability. Those who find their powers waning with age feel more strongly the need to defer the time when they must give up both business and amusement. At such times the doctor who has the full confidence of his patient can teach the pertinent facts about the preservation of health as they can be taught at no other time and by no other person. To use such opportunities will do more to insure health than can be done by any other outside organization or any publication of health propaganda.

Men secure the title Doctor of Medicine who may not have the sense of responsibility that must always be a part of the equipment of the complete physician. But the leaders in medicine have always recognized their broad responsibilities. Ever since the oath of Hippocrates was first written, the medical profession has sought to enforce on its members an understanding of the broad extent of the duties of the physician. From generation to generation there have always been members of the profession who felt keenly how great was their duty to labor for the general health interests of their patients and their communities. Today there are many who never tell a patient he is well without pointing out what he can do to remain so. New relations and new means of communication give new opportunities to tell the people how they may insure health. But the greatest influence for good is exerted by the individual doctor on the individual patient or family. To preserve this influence, no form of business enterprise must be allowed to disturb or impair the close confidence and good understanding between physician and patient.

EDWARD JACKSON, M.D., Denver.

HYPERVENTILATION IN ABDOMINAL SURGERY

To the Editor:—In THE JOURNAL, July 25, pages 267-269, in an article entitled "Hyperventilation in Abdominal Surgery," Dr. T. J. Ryan concludes that "carbon dioxide is of no value in the prevention of postoperative pneumonia."

This conclusion is drawn from a group of 135 cases in which, at the close of abdominal operations, carbon dioxide was administered only once, for about three minutes, and a control group of 276 in which carbon dioxide was not administered.

The morbidity is reported as 2.2 per cent for those who received the inhalation and 1.4 per cent for those who did not, and the mortality as 0.74 per cent for those treated and 0.36 per cent for those who were not. Obviously, if these figures are significant they indicate, not merely that carbon dioxide is without value in the prevention of postoperative pneumonia, but rather that this treatment tends to increase the incidence of postoperative pneumonia.

In fact, however, the number of cases in which the inhalation was administered is so small and the figures for morbidity, and particularly for mortality in the treated group, are so low that the change of a single case would reverse the result. Indeed, a figure of 0.74 per cent for the mortality in a group of 135 patients indicates that there was exactly one death. Did the series stop when it occurred?

Dr. Ryan fails to mention the form of anesthesia used in either group of cases. Yet it is quite certain that the element of anesthesia is one of the most important in producing or preventing postoperative pulmonary complications. Dr. Ryan quotes two papers by me, one of which was published sixteen years ago and the other six years ago. Since the first, and even since the second, there have been distinct improvements in methods of anesthesia.

However, my views also have changed in sixteen years, and even in six years. I still believe that when ether anesthesia by the old method is used it is better to ventilate the lungs at the end of anesthesia by means of carbon dioxide rather than to leave the patient unaided to eliminate the drug through a long hour or hours.

But the main point, as I see it now, is that anesthesia and operation together lower a patient's vitality, and particularly the tonus of his muscles. Because of this lowering of tonus he cannot stand up, or sit up, or even lift his head for some time after the operation. The same lack of tonus in the respiratory muscles, particularly the diaphragm, permits the lungs to be partially deflated. If the deflation is sufficient to result in an occlusion of any of the airways, the air in that portion of the lungs is soon absorbed. Atelectasis of parts of the lungs, or even a massive collapse of one lung, develops. If infection is present, pneumonia may follow.

It is my belief, on the basis of many years of investigation, that depression of the circulation after anesthesia and operation is also due to decreased tonus of all the skeletal and visceral muscles, which permits the blood to stagnate in the tissues.

In surgical shock the consequent failure of the venous return is a more important factor than is vasomotor failure.

Manifestly these respiratory and circulatory conditions cannot be completely counteracted by merely expanding the lungs once at the end of an operation, any more than general body tonus and vitality can at this time be restored sufficiently for the patient to get up off the operating table, or out of bed, dress, and walk home. The value of inhalation of carbon dioxide consists in this: When it is used as needed repeatedly after anesthesia and operation, the effects of loss of tonus in producing pulmonary complications may be obviated.

As I presented my views on this general subject fully in the Carpenter Lecture of the New York Academy of Medicine, I refrain from further restatement of them here.

YANDELL HENDERSON, PH.D., New Haven, Conn.

Atelectasis, Massive Collapse and Related Postoperative Conditions, *Bull. New York Acad. Med.* **11**: 639-656 (Nov.) 1935. Diseases of the Respiratory Tract (Lectures of the Graduate Fortnight New York Academy of Medicine, Philadelphia, W. B. Saunders Company, 1936, p. 331. Depression of Muscle Tonus as the Cause of Atelectasis, Failure of the Circulation and Other Postoperative Sequelae, *Lancet* **2**: 178-185 (July 27) 1935.

"TREATMENT OF EARLY SYPHILIS WITH ELECTROPYREXIA"

To the Editor:—In THE JOURNAL, July 18, Drs. Neymann, Lawless and Osborne, in their paper entitled "Treatment of Early Syphilis with Electropyrexia," state that "if external heat is used, especially if the temperature of the entire skin is raised to the same high level equal to that of the internal organs, terrifying states of delirium and dyspnea result." We desire to take issue with this statement. Since the introductory work of Simpson with the heated and humidified cabinet, the department of fever therapy of Grace Hospital has treated some 650 patients by artificial elevation of body temperature. Especially in the treatment of gonorrhea and its complications, body temperatures have been maintained at 106-107 F. (rectal) for six continuous hours, treatment being repeated every other day. Patients are admitted for treatment only after a careful cardiovascular-renal examination. Preparatory treatment consists of the administration of 5 grains (0.3 Gm.) of sodium pentobarbital followed by the judicious use of morphine or its derivatives. Saline solution in quantities of from 2 to 5 liters is consumed during a fever session. Being particularly interested in the mental reaction during elevated fever as contrasted with fever produced by infection, we have carefully recorded the results. The majority of patients experience a complete relaxation throughout the fever session. Fifteen per cent of the patients experience a mild delirium, while less than 0.5 per cent are sufficiently excited to require termination of the fever session. Dyspnea corresponds only to the elevated metabolism, and at no time has dyspnea been such as to require cessation of treatment.

J. M. BERRIS, M.D.,
M. K. NEWMAN, M.D.,
Detroit.

[The letter was referred to Dr. Neymann, who replies:]

To the Editor:—We do not sponsor any particular type of fever-producing machine. We have stated repeatedly that the skill of the physician and nursing personnel is far more important than the method employed. Terrifying states of delirium and dyspnea were frequently experienced with our patients when the entire skin surface was raised to the same high level of temperature as the internal organs, averaging 42 C. (107.6 F.). By the entire skin surface we mean the scalp, face and neck. Moreover, it should be noted that the patient at the same time breathed hot air at a temperature ranging between 54.4 C. (130 F.) and 71.1 C. (160 F.). These are facts and not theories.

It is interesting to note that the investigators at the Grace Hospital in Detroit have experienced 15 per cent of mild deliriums. In our experience with penetrating heat we have rarely observed the occurrence of delirious states, though we have given thousands of treatments. The incidence of delirium in our series is certainly less than 5 per cent. We rarely resort to hypnotics and give morphine and its derivatives only to truly psychotic individuals. Perhaps the particular technic employed at the Grace Hospital necessitates the use of sedatives and hypnotics and these, in conjunction with high fever, produce this really unusual number of deliriums.

CLARENCE A. NEYMANN, M.D., Chicago.

A CONFERENCE ON MARRIAGE AND FAMILY PROBLEMS

To the Editor:—The changing trend in medicine and education was shown by the recent conference on teaching of Marriage and Family Problems, held at the University of North Carolina, Chapel Hill, N. C., July 6 to 11, under the direction of Prof. Ernest Groves of the sociology department. The important part the physician must assume in the teaching of sex education, preparation for marriage and family adjustments is evident from the list of topics presented by physicians at this conference. The conference stressed the necessity for the physician becoming aware of the sociological problems of medicine, which form part of the problems presented by preventive medicine and mental hygiene. The nonmedical marriage counselor is attempting to advise on matters of sexual adjustment, family relations and behavior problems and even contraception because heretofore the physicians have largely ignored these phases of public health. The gynecologist, psychiatrist and obstetrician in scattered instances have been cognizant of these problems in treating their patients. The conference brought out the need for scientific sex information concerning human beings and felt that college courses should make such information available to all students who may request such information. For such purposes it is necessary to correlate medical facts with sociological application, which is the newest approach to the teaching of sex education, marriage preparation and family relations.

For marriage advice the ideal arrangement is for the family physician to be properly trained to serve as a competent marriage counselor, calling on specialists when necessary. May I call attention again to the necessity, therefore, of including such training in the regular medical school curriculum, as was also pointed out recently in the article on preparation for marriage by Dr. Robert L. Dickinson in the *American Journal of Obstetrics and Gynecology* **31**: 165-168 (Jan.) 1936.

The wide field of topics discussed is shown by a list of the papers presented both by physicians, sociologists, psychiatrists, psychologists and teachers.

Physicians presented the following:

Medical Aspects of Preparation for Marriage, Dr. Eva Dodge, Winston-Salem, N. C.
Problems of Pregnancy That Need to be Understood by Married People, Dr. R. A. Ross, Duke University Medical School, Durham, N. C.
Premarital Mental Hygiene Factors in Marriage Adjustment, Dr. Mabel E. Goudge, Durham, N. C.
Preparation of College Students for Marriage and Life, a Presentation of Courses Given at New York University-Heights Center, Dr. Marie Pichel Warner, New York.
Medical Viewpoints on the Safe Period, Dr. Benjamin Warner, New York.
Problems of Child Care, Dr. A. H. London, Durham, N. C.
What Should a Medical Premarital Examination and Interview Include? Dr. Marie Pichel Warner, New York.

Nonmedical papers presented were as follows:

The Psychology of Childhood—Emotional Development, Play Activities, Intellectual Development, Behavior Problems, Phyllis Blanchard, Philadelphia Child Guidance Clinic, Philadelphia.
The Family and the Law—Marriage and Divorce Historically Developed, Fred B. McCall, professor of law, University of North Carolina.
Food Needs and Problems of Children, Katherine Heitshu, dietitian, Virginia Medical College, Richmond, Va.

V 10
1936

Teaching the Marriage Course in a Coeducational College, Mrs. Clyde A. Milner, director of personnel, Guilford College, N. C.
The Work and Problems of a Maternal Health Association, Gladys Gaylord, Maternal Health Association, Cleveland.
The Rôle of the Teacher in Counseling, and the Limitations of His Functions, Ralph P. Bridgman, director, National Council of Parents Education, New York.
College Instruction and Preparation for Marriage, Ernest R. Groves, professor of sociology, University of North Carolina.
Education for Marriage Through the Churches, L. Foster Wood, Federal Council of the Churches of Christ in America, New York.
Juvenile Delinquency, Professor W. B. Sanders, University of North Carolina.
Common Problems of the Married Woman, Gladys Hoagland Groves, author, Chapel Hill, N. C.
Marriage Problems Due to Woman's Changing Status, Ernest R. Groves, professor of sociology, University of North Carolina.
Education for Family Life for High Schools, Sadie J. Swenson, Technical High School, Springfield, Mass.

The students and their parents are demanding adequate preparation for improving marriage and family relations, and the timorous colleges can well follow the courageous example of the University of North Carolina, under the leadership of Professor Groves.

I am submitting this as a physician who is actively engaged in the practice of medicine and who deals daily with many of the problems mentioned. I believe this information will encourage social workers, teachers and parents to urging their physicians into becoming actively interested in these problems.

MARIE PICHEL WARNER, M.D., New York.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

ALBUMIN IN URINE

To the Editor:—In THE JOURNAL, Oct. 12, 1935, page 1210, appears a query and answer regarding employment examinations and the establishment of standards, including one for limits of albumin in the urine; we are mentioned as being suppliers of the equipment. Is the limit of 10 mg. of albumin per hundred cubic centimeters of urine universally considered as a maximum where the line shall be drawn, at least as a preliminary step? Is this limiting figure recognized by those medical examiners who are handling the employment work for some of the larger concerns? Do you know of any industrial concerns or associations that have attempted to lay down standardized examination specifications which include the albumin phase? Where can such information be obtained? We are greatly interested in this special field of employment for our albumin standards. I should like to be sufficiently informed so that I might approach the medical director of any company and point out that there are limits to albumin and that such determinations should be quantitative; that "10 mg. per hundred cubic centimeters of urine and below" may be disregarded, that 20, 30 and 40 mg. may mean so and so.

W., New York.

ANSWER.—These pertinent questions are difficult to answer. So far as one can ascertain without extensive inquiry by questionnaire, there are no generally accepted criteria in the field of employment examinations. Each industrial medical department has created its own standards and these vary in different industries and for different types of employment. The expected duration of employment, the type of work to be done and the age of the applicant are all variable factors. In the original query, the criteria for the employment of motor vehicle drivers was mentioned specifically and in such instances, when the lives of passengers and others depend on the driver's good health, rigid qualifications are justified. Such high requirements would not be reasonable, however, in the acceptance for temporary employment of labor, as in nonhazardous construction work.

The limiting figure of 10 mg. of protein per hundred cubic centimeters of urine as normal is derived from the general practice of life insurance medical rating and from clinical experience. For example, the finding of 10 mg. of albumin per hundred cubic centimeters of urine intermittently would not increase the rating (or the presumed life expectancy) under age 45, but over this age it would increase the premium rate 25 per cent. On the other hand, 20 mg. or more not constantly present at any age would justify an increase in premium rate of from 25 to 50 per cent or even rejection of the risk. If the albuminuria is constant, that is, found uniformly on repeated urine examinations, the increased rating would be still higher and many of these applicants for insurance would be rejected. Additional impairments, such as hypertension, would warrant rejection without repeated urine examinations.

It is realized, of course, that the objectives of examinations for life insurance and for employment may be quite different. If, however, the industrial concern has existent a "sick benefit" service or a pension plan, the problems become similar. The similarity of these two fields of prognostic medicine depends on whether or not the employment is expected to be permanent or transient. If the objective of employment examinations is merely to weed out those who are particularly poor risks from the point of view of accidents (reducing losses under the employer liability laws), the limit of 10 mg. of albumin per hundred cubic centimeters of urine is far too rigid. Clark and Drinker (Industrial Medicine, National Medical Book Company, New York, 1935) do not include urinalysis in the routine of employment examination. They state that "applicants should be rejected on physical grounds only when their employment would make them a menace to themselves, to others or to property." This definition of the criteria for rejection for employment may be far too liberal if the employer is interested in the health of his employees.

Even profuse proteinuria, especially in young persons, may exist without seriously affecting their risk or longevity, as in orthostatic albuminuria. The proof that albuminuria is orthostatic in character may mean acceptance for employment instead of rejection. The medical service of employment offices cannot afford to take the time necessary to determine the clinical significance of albuminuria when found in a prospective employee, particularly at a time when there is a superabundance of unemployed labor. Although at times the consequences may prove most unfair to a few individuals, it is necessary to create arbitrary criteria of acceptability. There is no uniformity of opinion concerning these as yet. It may be wise also to recall that considerable renal impairment may exist with but traces (much less than 10 mg. per hundred cubic centimeters) of albumin in the urine. In these instances, however, physical examination, including determination of the arterial tension, should reveal disease. The problem of economic reconstruction and employment of those physically handicapped has recently been considerably advanced in Philadelphia (Stroud, W. D.: The Rehabilitation and Replacement in Industry, THE JOURNAL, Nov. 2, 1935, p. 1400).

Extensive inquiry among the offices of medical examiners of the larger industrial concerns might yield pertinent information.

MAGNESIUM SULFATE INTRAVENOUSLY IN HYPERTENSION

To the Editor:—Please give details as to the use of magnesium sulfate intravenously in the treatment of hypertension; also references.

PAUL K. JENKINS, M.D., Miami Beach, Fla.

ANSWER.—The pharmacologic actions of magnesium sulfate are different when injected intravenously or intramuscularly from the action when administered by mouth (Meltzer, S. J.: *M. Rec.* **68**:965, 1905). There is no catharsis, but a cerebral depression and reduction in muscle tone (Meltzer, S. J.: Inhibitory Properties of Magnesium Sulfate, THE JOURNAL, March 25, 1916, p. 931). Anesthetic properties develop when it is injected and these effects are apparently associated with reduction of the spinal fluid pressure and the bulk of the brain, presumably because of cerebral dehydration (Weed, L. H., and McKibbon, P. S.: *Am. J. Physiol.* **48**:512 [May] 1919. Foley, F. E. B., and Putnam, T. J.: *Am. J. Physiol.* **53**:464 [Oct.] 1920. Auer, John, and Meltzer, S. J.: *J. Exper. Med.* **23**:641 [May] 1916). Because of the cerebral effects and because of the antitetanic action, intravenous magnesium sulfate has been employed especially in the management of eclampsia and the late intoxications in pregnancy (Adair, F. L., and Stieglitz, E. J.: Obstetric Medicine, Philadelphia, Lea & Febiger, 1934). It is then administered as a hypertonic solution (10 per cent) in doses of about 10 cc. every four hours for six or eight doses (McNeile, L. G., and Vruwink, John: Magnesium Sulfate Intravenously, THE JOURNAL, July 24, 1926, p. 230. Bowman, E. C.: *South. M. J.* **18**:351, 1925. Blackfan, K. D., and Hamilton, B., *Boston M. & S. J.* **193**:617 [Oct. 1] 1925). Remarkable control over eclamptic convulsions have been reported, with an associated reduction of the arterial tension. In view of the oft reiterated suggestion that eclamptic convulsions are etiologically correlated with cerebral edema (Zangemeister, *Ztschr.*

f. Geburtsh. u. Gynäk. **79**:1, 1916. Slemons, J. M.: Value of Blood Pressure Determinations in the Practice of Obstetrics, THE JOURNAL, Sept. 8, 1917, p. 778) and the known dehydrating effect of intravenous magnesium sulfate, it has been assumed that the pharmacodynamics involves cerebral dehydration. Improvement of the circulation to the vasomotor center presumably accounts for some of the reduction in the diastolic tension (Baker, B. M., and Bordley, James, III: *Bull. Johns Hopkins Hosp.* **38**:320 [April] 1926). The effects of magnesium sulfate are primarily expressed in relieving the hypertensive state but are without great benefit to the course of hypertensive arterial disease. Intravenous injection of magnesium sulfate is said also to aid in the absorption of retinal exudates in hypertensive disease (Lissner, H. H.: *California & West. Med.* **40**:330 [May] 1934).

In acute glomerular nephritis with hypertension and azotemia, magnesium sulfate is said to diminish the irritability and reduce twitching movements (Blackfan and Hamilton, cited before. Aldrich, C. A.: *J. Iowa M. Soc.* **25**:471 [Sept.] 1935). However, administration of magnesium sulfate by any route to nephritic patients may be distinctly dangerous. The elimination of the salt may be greatly impeded in nephritic individuals and thus elevation of the magnesium content of the blood may occur. Coma due to increased plasma magnesium has been reported as occurring after single oral purgative doses of the salt (Herschfelder, A. D.: Clinical Manifestations of High and Low Plasma Magnesium, THE JOURNAL, April 7, 1934, p. 1138). Magnesium sulfate is also a cardiac depressant and on intravenous injection may cause severe cardiac reactions: abrupt collapse simulating a state of shock.

Despite the various favorable reports for intravenous medication with magnesium sulfate in hypertensive arterial disease, the general application of this measure would be unwise. It may be justified in certain acute emergencies, such as eclampsia or when cerebral edema is presumed to exist. Hypertensive arterial disease is a chronic progressive and insidious disorder, often asymptomatic for many years; the therapeutic effects of magnesium sulfate are too transient and fleeting to be of permanent or curative value. Medication requiring frequent injection (whether hypodermically, intramuscularly or intravenously) should be limited to urgent situations; any injection (especially intravenous) is attended with some risk. It has been demonstrated repeatedly that, with a few exceptions, hypertensive patients who feel relatively well will not long continue medication by injection. Long continued therapy is essential to arrest the progression of hypertensive arterial disease. Magnesium sulfate should be considered a relatively dangerous drug in the presence of nephritis and/or renal functional impairment.

MERCURY IN SYPHILIS

To the Editor:—What is the best preparation of mercury to use with the needle in syphilis? Is mercury by mouth efficient? If so, what is the best preparation? Is it as satisfactory as mercury intramuscularly? Is mercuric succinimide efficient? I have given the succinimide, one-third grain (0.02 Gm.) every second or third day for two or three months without producing salivation or anything else. I have given it in two-thirds grain (0.04 Gm.) doses every fifth day without causing a disturbance. Should mild salivation be caused by mercury preparations for the best results? Please omit name.

M.D., Pennsylvania.

ANSWER.—For intramuscular use in the treatment of syphilis the soluble and insoluble mercurial salts were in the past used quite extensively. The soluble salts, such as succinimide, bichloride and benzoate, and the insoluble, such as salicylate and gray oil, had popular vogue. During the last ten years there has been a steady decrease of the use of mercury intramuscularly because it has been found that bismuth has a higher therapeutic index, a lower incidence of toxicity, and fewer local reactions at the site of injection. The therapeutic advantages of bismuth preparations over mercury preparations have been supported in the numerous studies reported in the literature.

Mercury succinimide is still used by some syphilotherapists when bismuth is not tolerated well, and occasionally patients are encountered in whom a daily injection of a soluble salt such as the succinimide will produce satisfactory therapeutic effects when bismuth has failed. These cases are rare, however. The soluble salts are absorbed quickly and likewise excreted quickly, so that, if the succinimide is used, daily injections should be given. Mercury by mouth has no place in the treatment of early or serious complications of syphilis. In the elderly person with a benign syphilis, or occasionally in the patient with hepatic syphilis, it may be used. It is not as therapeutically efficient as intramuscular mercury. The preparations used by mouth are yellow mercurous iodide in 0.016 Gm. doses, or mercury with chalk in 0.065 Gm. doses.

Salivation is not an index of thorough mercurialization but is rather indicative of the fact that the patient had pyorrhea, much constructive dental work with many crowns, or a "dirty" mouth before the mercurial therapy was started. Prophylactic treatment of the teeth and gums is necessary in this type of patient before the mercury is given. Accordingly, mild salivation is not essential in the treatment of syphilis by mercury.

In the selection of a bismuth preparation it is advisable to choose one that has a high content of metallic bismuth. (See New and Nonofficial Remedies.)

POLLEN DISTRIBUTION IN MAINE

To the Editor:—In THE JOURNAL, July 18, is a reply to a request for information about hay fever resorts in Maine. The editorial answer is inadequate and appears to be based solely on an individual ragweed concentration count in the high altitude forest, such as Rangeley Lakes. The very extensive sea coast of Maine in islands, capes and long indentations gives the best natural sea air limitation to ragweed air pollution. I regret that the public does not yet understand that highways of travel, as well as the wind, carry ragweed pollen. Cars are good agar plates for the collection and transportation of pollen. There has been less traffic contamination as well as less wind-borne contamination over mountains and forests. The numerous islands and forest-protected headlands on our Maine coast are nearly free from hay fever. Among such headlands, almost surrounded by ocean, is Eastport, which has only one highway approach, with little travel over it until this year. Such conditions obtain at perhaps a hundred other points on the Maine coast.' No area east of the Rocky Mountains is zero to ragweed. Its prevalence is entirely in accordance with a kindergarten knowledge of physics and geography. I am pleased to state that several towns this year have made appropriations to pull up and destroy ragweed. Such towns earn the right of publicity for their intelligent and, in due time, profitable action.

CHARLES B. SYLVESTER, M.D., Portland, Maine.

ANSWER.—The answer to Dr. Albers was not "based on an individual ragweed concentration count in the high altitude forests such as Rangeley Lakes." It was based on the results of two seasonal pollen studies made at Rangeley Lakes, together with the results of studies made in the Gaspé Peninsula, at Eastport, Maine (see answer), at Bar Harbor and at Boston. The conclusions drawn also involved experience gained in many years of atmospheric pollen study in more than a hundred localities in North America, including some twenty points along the Atlantic and Gulf coasts. The answer did not attempt a comprehensive discussion of the hay fever resorts in Maine but was an effort to select, by means of available information, the most nearly pollen-free point affording first class hospital facilities. The protest seems to be concerned mostly with (*a*) defending the merits of the numerous coastal hay fever resorts of Maine; (*b*) introducing a new theory of pollen distribution.

(*a*) No statistics or other proof is offered to support the claims made, and no definite place better than the Rangeley Lakes area is suggested unless the plea for Eastport is to be so interpreted. By rereading the published answer it will be seen that Eastport was not condemned. On the contrary, its merits were weighed on the basis of comparative statistics.

As to the amount of hay fever in the sparsely settled islands and headlands of the Maine coast, conflicting reports have been published for the last sixty years. (See annual lists of places reported as "immune, not immune and partially immune," published by the United States Hay Fever Association from 1874 to the present time.) This is primarily a clinical approach to the problem—a trial and error method—and one that has never proved very satisfactory (Wyman, Morrill: Autumnal Catarrh, [Hay Fever], Cambridge, Mass., Riverside Press, 1876, p. 57). It will doubtless be continued indefinitely by those who do not fully accept the thesis (Rackemann, F. M., and Smith, L. B.: Ragweed Hay Fever: Symptoms and Pollen Concentration Compared [1930], *New England J. Med.* **204**:708 [April] 1931. Hopkins, Marjorie: Effect of Weather Variations upon the Symptoms of Hay Fever Patients, *J. Allergy* **2**:145 [March] 1931. Feinberg, S. M., and Durham, O. C.: Hay Fever in Chicago and Suburbs: Clinical, Field and Air Observations, *Illinois M. J.* **63**:464 [May] 1933) that hay fever symptoms vary in intensity directly with the quantity of pollen encountered, and by those who doubt (Rackemann, F. M.: Clinical Allergy—Asthma and Hay Fever, New York, Macmillan Company, 1931, pp. 253-258. Vaughan, W. T.: Allergy, St. Louis, C. V. Mosby Company, 1931, p. 110) that the pollen contact of sensitive persons may be determined with practical accuracy by the use of atmospheric pollen slides.

The inquirer seems particularly anxious that due publicity shall be given to the several towns which have this year "made appropriations to pull up and destroy ragweed." He should have designated these places. But every one knows that appropriations are not always adequate or effective. One city set aside several thousand dollars for ragweed extermination last year, but the fund was used up in the first two days of the

V 10
1936

campaign and before any appreciable inroads had been made on the ragweeds. Another large city recently spent in one season approximately $1,000 per square mile of its area ($165,000 in all) with the purpose of making the city a hay fever refuge. No doubt a number of pollen-sensitive people who lived near extensive weed patches were slightly benefited, but the total result was disappointing in that the pollen slides exposed by the United States Weather Bureau revealed more ragweed pollen in the air than during any previous season of record.

The variation in kinds and quantities of pollen inhaled by sensitive persons engaged in ordinary pursuits depends on many varied and elusive factors, and an elementary knowledge of geography and physics is not sufficient to measure the end result. Atmospheric pollution is not a local affair, as proved by the large amount of atmospheric pollen found in forested areas as much as 75 to 100 miles from weed-infested areas (Durham, O. C.: Pollen Studies in Selected Areas, THE JOURNAL, April 27, 1935, p. 1486).

On the basis of the arguments advanced in this protest, one would readily conclude that the islands off the North Carolina or Texas coast would be perfect refuges for hay fever victims, but atmospheric studies have proved the exact opposite. A sea coast location has the admitted advantage of ocean breezes, but these are not constant, and if the hinterland is an agricultural area, nothing can stop pollen laden winds from blowing over the coast. Thus, Atlantic City is an excellent hay fever resort when the wind blows from the ocean but a very poor one when the wind blows from the land. Miami, Fla., has absolutely no pollen in the air when the wind blows from the ocean, and almost none when the wind blows from the land, because the Everglades have comparatively few farms and almost no ragweeds.

(*b*) The theory advanced, namely, that highways of travel are important sources of pollen transport, is new and original. No proof is offered and no explanation given as to how an "agar plate" even of gigantic size could collect more than comparatively insignificant amounts of pollen, or how after collecting it could then liberate it again in an otherwise pollen-free locality.

The lower several thousand feet of air contains during the pollen season large amounts of pollen (Scheppegrell, William: Airplane Tests of Hay Fever Pollen Density in the Upper Air, *M. J. & Rec.* **119**:185 [Feb. 20] 1924). A cubic mile of air on days of moderate ragweed contamination contains about a pound of ragweed pollen (approximately 200 billion pollen grains). Heavy concentrations of nearly a hundred pounds per cubic mile have been recorded. With ordinary wind velocities of from 10 to 20 miles an hour it can be seen what enormous amounts of pollen are quickly moved about. No artificial carrier could possibly approach this result.

SUNBURN OINTMENTS

To the Editor:—I have used numerous ointments for treatment of sunburn, among them boric acid ointment and butesin picrate, the only disadvantage being that they soil the clothes or discolor them. Now what ointment could you recommend that would be effective and yet not possess these obnoxious features? There is a widely advertised ointment that claims such features (Noxzema), yet from some of my patients who have used it I have heard both praise and condemnation of the product. Has this particular ointment been investigated by you as to the possible ingredients? Please omit name and city. M.D., New Jersey.

ANSWER.—Various ointments can be used advantageously in the treatment of sunburn. Five or ten per cent boric acid in cold cream, an ointment containing solution of aluminum subacetate 1 part, wool fat 2 parts and zinc paste (without salicylic acid) 3 parts, and, in severe sunburn, tannic-acid containing ointments, are of value. The use of liquids or lotions obviates some of the objectional features of ointments and are also effective. Calamine lotion to which has been added 8 to 10 per cent of solution of aluminum subacetate, or solution of aluminum subacetate diluted with 15 parts of cold water may be used as a compress, or local applications of equal parts of olive oil and lime water to make an emulsion.

The American Medical Association has never published anything on "Noxzema" nor has it been examined by our own Laboratory. It was, however, analyzed by the chemists of *Good Housekeeping Magazine*, who reported:

> The sample appears to consist essentially of an emulsion of water, calcium and ammonium soap, with some saponifiable oil or fat. It contains also small amounts of borax, glycerin and volatile oils (camphor, oil of cloves).

Noxzema has no particular advantages as an ointment for sunburn over any mentioned and has all the disadvantages of an ointment as far as greasiness and messiness are concerned.

CHANGES IN TASTE SENSATION

To the Editor:—A man, aged 59, married, appears to be in perfect condition for his age. His only complaint is that any starchy food or sugars taste brassy and unpalatable. He is a traveling salesman, active, with a good appetite and full of energy. There is no loss of weight and no symptoms of any kind appear except as mentioned. The patient is about 6 feet (183 cm.) tall and weighs about 190 pounds (86 Kg.). He is active in gait and gesture. The tongue is slightly coated. A few carious teeth have recently been filled. The throat shows no changes of note. Endocrine, neuromuscular, skin, bone and joint examinations gave no observations of note. The blood pressure is 158 systolic, 98 diastolic. The pulse is regular and the rate is 74 a minute. The heart shows normal rhythm and no murmurs. The urine contains no albumin or sugar; the specimen is clear. The abdomen shows average panniculus, no masses and no tenderness. The bowels move fairly well. The patient takes an occasional laxative. He has recently taken salts with copious evacuation and no improvement in the condition of which he complains. The lungs are normal. While the foregoing does not represent all the observations that could be obtained, it will be stated that no blood chemistry and no other laboratory or x-ray data have been sought, since the patient does not feel sick and does not care to undergo extra expense unless it is justified in his own mind. Please omit name. M.D., Mississippi.

ANSWER.—There is no organic disturbance that would affect taste, particularly for starches and sugars. Sometimes arteriosclerotic involvement of the tongue and of the mucous membranes produces burning sensations and changes in taste.

POISONING POSSIBILITIES FROM BUFFING AND POLISHING ADJUVANTS

To the Editor:—As plant physician of the Wright Aeronautical Corporation, Paterson, N. J., I am desirous of obtaining definite information as to the effects (poisonous, if any) of the following material on the human being: tripoli, manufactured by the Plating Products Company, Hansen VanWinkel, and Nunning & Nunning, of Newark, N. J.; red rouge, manufactured by the same firms; mutton tallow, manufactured by the Chandler Chemical Company of Cleveland, and emerite (grade 126) and (grade 150), manufactured by E. Reed Burns of Brooklyn. These substances are used at our plant mostly by polishers, who are obliged to handle these substances and many of the men claim that they unconsciously insert their fingers in their mouths and also touch the moist surfaces of the mucous membranes of the nose and eyes. What I am anxious to know is what effect, if any, these substances have on a person when it is handled in this manner; also what effect, if any, it would have if part of it is inhaled. Do the substances contain anything poisonous or injurious? FRANK A. BARLOW, M.D., Paterson, N. J.

ANSWER.—Since buffing and polishing adjuvants as manufactured by various concerns are quite similar as to chemical constituents, it is desirable that this answer apply to all such products rather than to those of any one manufacturer. Tripoli is a cryptocrystalline siliceous mineral derived in this country chiefly from southern Illinois and southern Missouri. Because of its peculiar electrostatic properties, it does not readily lend itself to dust formation, even when in fine, dry particles. Although silicosis caused by this material is practically unknown, it is believable that if the substance actually entered the lungs in sufficient quantities and over prolonged periods of time, silicosis would be produced. This substance, as used as a polishing agent, is ordinarily combined with other substances in the following approximate formula: tripoli, 50 per cent; silica, 30 per cent; stearic acid, 10 per cent; paraffin (or other) wax, 10 per cent.

Red rouge is red iron oxide (Fe_2O_3). This substance is used extensively in the polishing of plate glass. Gross exposures associated with glass polishing and in the manufacture of this rouge have provided no evidence of its being a source of dusty lung disease in any form. A large number of roentgen examinations have been made of workers highly exposed in dusty areas. This is borne out by the experiments of the United States Public Health Service. A governmental report (Miller, J. W., and Sayers, R. R.: The Response of Peritoneal Tissue to Injected Dusts, *Pub. Health Rep.* **49**:80 [Jan. 19] 1934) states that "the response of the peritoneal tissue to this dust is therefore one of inertness." As used in polishing and buffing, this red rouge may be incorporated with tallow, waxes, fatty acids or other bases. Such substances, rather than the rouge itself, may occasion a dermatitis.

Mutton tallow has long enjoyed extensive household and professional use in various emollients. Notwithstanding, it may become rancid and lead to a dermatitis or, in the absence of rancidity, may prove to be the source of comedones.

Emery (aluminum oxide, Al_2O_3), or carborundum (silicon carbide, SiC), as used in polishing, may give rise to much dust, but again it may be stated that such dusts are relatively innocuous compared with the highly injurious action of silica.

Unmentioned in this query but much used in polishing are French chalk, rottenstone and other calcium minerals. None of these have led to genuine dusty lung diseases. At times there

may be used in the polishing of chrome plated materials a chrome-containing agent. This chromate is highly irritating and has led to the production of characteristic "chrome holes" and chrome dermatitis. This discussion tends to exculpate practically all the substances mentioned in the query as being without harmful properties except as producers of skin disease or conceivably paraffinomas. Nevertheless, the occupation of polishing and buffing is to be accepted as a dangerous one. The incidence of pneumonia is high; tuberculosis, at least in past decades, stands out; low grade respiratory diseases are common; postural hazards are definite; continuous vibration may lead to tenosynovitis and related disorders. In addition to the dermatitis from the greasy substances used as adjuvants to polishing, skin lesions may arise from mechanical agencies and from the glues used in the resurfacing of the polishing wheels. The polisher and buffer may perform his duties in an atmosphere laden with dust from cotton, linen, synthetic abrasives, glues, limestone and metal dust from the parts being polished or buffed, so that in the final analysis this trade is to be rated as a somewhat hazardous one.

PRECOCIOUS UNILATERAL HYPERTROPHY OF BREAST

To the Editor:—A girl, aged 10½ years, 52 inches (132 cm.) tall, weighing 74 pounds (33.6 Kg.), had the usual diseases of childhood and a tonsillectomy in 1928. Her general health was from good to excellent. About May 1, 1935, she fell into an open manhole, striking the anterior surface of the chest. No visible contusion was produced, but there was pain over the chest, especially the lower part of the thorax, in breathing. This pain and aching continued intermittently for six weeks. About August 10 the mother noticed a slight enlargement of the left breast, especially around the nipple and areola. I first examined the child at this time. The right breast showed no enlargement or development. Palpation of the left breast showed a rounded but not nodular enlargement about the size of a shelled almond, loosely adherent to the nipple and areola but freely movable over the pectoralis muscle. The enlargement was moderately tender and the patient complained that even light pressure produced discomfort. About October 1 the patient was seen in consultation and examined by a general surgeon, who advised watchful waiting and the application of iodine ointment for a month. November 1 she was examined by the same general surgeon, who considered either the removal of a small portion of the enlargement, which had now reached the size of an unshelled almond, for biopsy, or roentgen therapy. He decided against biopsy, to avoid mutilation of the breast and to conserve cosmetic appearance in later years and suggested roentgen therapy. The advice of two roentgenologists differed and roentgen therapy has been deferred, owing to the fact that one competent man advises that roentgen treatment would be useless unless a malignant condition existed and might even arrest the development of normal breast tissue. There is no involvement of the left axillary or cervical glands. I then consulted two pediatricians, who, after taking the history and making an examination, advised against treatment and diagnosed the case as a precocious unilateral normal development of breast tissue. No one consulted has been markedly positive in his opinion as to diagnosis and prognosis and all stated frankly that in their experience they had seen only a limited number of parallel cases. Reference to the medical literature has not been helpful. At the present time there is no development in the right breast. The left breast is visibly and palpably enlarged and if any change has taken place during the period of observation, two things I believe are noteworthy; namely, that at times there seems to be a slight variation in the size of enlargement, as proved by inspection and palpation, and fulness at times or wrinkling at times in the nipple and areola; also the enlargement does not seem to be as adherent to the nipple as on early examination. No menstruation is present nor are there more than few signs that the child is approaching puberty. Naturally, I refrain from advising any procedure that will mutilate or destroy what will eventually be this child's left breast, both from the esthetic and the maternal angle; yet, if this is a malignant condition due to trauma, I must advise radical surgery and must do so in the near future. Your suggestions as to diagnosis, treatment and prognosis will be greatly appreciated. Kindly omit name.

M.D., Wisconsin.

ANSWER.—The enlargement of the breast probably represents a precocious unilateral prepuberty hypertrophy. The relationship between the possible trauma and the condition of the breast is highly questionable. In addition to the precocious unilateral prepuberty development the presence of a discrete mass probably represents a state of so-called puberty mastitis. In this condition the enlargement is due to a hyperplasia of the pericanalicular and periacinous connective tissue and of the duct and acinous epithelium. This condition is common between the tenth and thirteenth years of life. It is usually bilateral but sometimes unilateral. It is possible, but not likely, that the patient is suffering from an actual tumor of the breast induced by trauma. The differential diagnosis depends on the exact nature of the mass. In "puberty mastitis" the lesion assumes definite and very characteristic features. The swelling forms a disklike or spherical tumor situated in the region of the nipple and areola and varying from 3 to 5 cm. in diameter. If the clinical observations support this diagnosis, both surgical intervention and radiation therapy are contraindicated and there should be no treatment except careful observation. If the clinical examination of the tumor does not coincide with the classic manifestations in "puberty mastitis," and particularly if the mass shows evidence of progressive enlargement, the nature of the lesion must be established by means of biopsy. The weight of evidence in this case favors diagnosis of precocious unilateral puberty hypertrophy. The differential diagnosis of this condition is given in "Tumors of the Breast," by G. L. Cheatle and Max Cutler, Philadelphia, J. B. Lippincott Company, pages 21-24.

USE OF SALINE SOLUTIONS IN THROMBO-ANGIITIS OBLITERANS

To the Editor:—Good results have been reported with the use of intravenous injections of 5 per cent saline solution in the treatment of thrombo-angiitis obliterans. Will you kindly advise me as to the specific action of the solution? Please advise me also as to who first discussed the intracutaneous injection of physiologic solution of sodium chloride to test the circulatory condition of an extremity. Please omit name.

M.D., New York.

ANSWER.—Use of intravenous injections of 5 per cent sodium chloride solution in the treatment of thrombo-angiitis obliterans is not regarded as a specific treatment. It is merely a means employed to hasten the development of collateral circulation when major vessels have been occluded. While the beneficial results have been noted in hundreds of cases, the mechanism by which this benefit is produced is not established. A striking increase in blood volume follows the intravenous injection of hypertonic salt solution and persists from two to four hours. Such an increase in the amount of circulating fluid within the blood vessels probably opens up capillary circulation that is ordinarily closed. It may have some stretching effect on the larger vessels. The salt injected is excreted slowly, usually requiring forty-eight hours for total excretion. It rapidly leaves the blood stream after injection and undoubtedly enters the body tissues. The accompanying water thus added to the soft tissues combats the tendency to dehydration and perhaps promotes the development of collateral circulation. The intracutaneous injection of physiologic solution of sodium chloride to test the circulatory condition of an extremity was proposed by Milton B. Cohen. The article appeared in THE JOURNAL, May 23, 1925, p. 1561.

TREATMENT OF PUS FROM URETHRAL FISTULA

To the Editor:—What treatment would you recommend for a discharge of pus (now negative on smear for gonococci) from an opening one-eighth inch away from the meatus? Gonococci were present in a urethral smear, but the discharge has ceased and urinalysis is also now negative. Nine injections of Corbus-Ferry Filtrate (Parke, Davis & Co.), intracutaneously, weekly, have been given, the last two being each 0.5 cc. in quantity.

M.D., New York.

ANSWER.—It usually is possible to clear infection from these channels by the injection of the milder protein silver solutions at frequent intervals. To do this a small probe-pointed needle is passed to the depths of the sinus and the fluid injected as the needle is withdrawn.

At times these channels can be destroyed by passing a fulgurating wire to their depths and turning on the current.

If a para-urethral sinus is sufficiently close to the urethra, the intervening mucous membrane can be severed. Care should be taken that the incision extends completely to the depth of the sinus; otherwise an ideal structure for the perpetuation of a gonorrheal infection is left, should the patient again acquire the disease.

BILATERAL SCIATICA

To the Editor:—I have a patient who, because of a bilateral sciatica, is able to get relief only by lying with his hips in an acutely flexed position (the thighs flexed on the abdomen). I shall appreciate it if you will advise me as to what apparatus will retain his thighs in this position during sleep. Is there any recent method of treatment that might relieve or cure his condition? Are there any men who specialize solely in this? If so, will you please give me their names? Please omit name.

M.D., Maryland.

ANSWER.—When a patient is suffering from a severe and resistant sciatica and particularly from a bilateral sciatica, a lumbar puncture should be made to ascertain whether there is an intraspinal pathologic condition. This puncture should be made low, preferably between the fifth lumbar vertebra and the sacrum, as the spinal block may be in the lower portion of the canal pressing on the roots of the cauda equina. The fact that the patient gets relief only in acute flexion of the thighs is not in keeping with the ordinary symptoms of sciatica

V 107
1936

due to pathologic changes in the lower lumbar spine or sacrolumbar junction. The position can be maintained only by balanced traction, placing the thighs in flexed position on an inclined plane. However, in view of the bilaterality and the unusual position of relief, the question of intraspinal pressure should by all means be settled first. Any experienced orthopedic surgeon ought to know how to manage a case of simple sciatica. If intraspinal pathologic change is proved or strongly suspected, the services of a neurologic surgeon should be enlisted.

TRAINING INFANTS TO BLADDER AND BOWEL CONTROL

To the Editor:—In *Time*, February 17, under "Medicine," Mrs. Gruenberg of the Child Study Association of America makes the following statement, in part: "There has been a definite reaction against the practice . . . of beginning to train infants to bladder and bowel control during the first weeks of life. . . . Specifically we suggest that mothers should not begin trying to train their children in bowel control much before the age of eight months . . . bladder training . . . fifteen to seventeen months is early enough." This is the first time I have read this opinion. Is it accepted as best at the present time? If so, I wonder what is the danger, if any, of starting earlier.

ARTHUR B. DAVENPORT, M.D., Tunkhannock, Pa.

ANSWER.—As in so many other things, a medium course seems the wiser and more feasible policy. Trying to train an infant "to bladder and bowel control in the first few weeks of life" is futile so far as the former is concerned. The latter commonly consists at that early age of using a suppository or a soap stick at regular times for a baby who normally has only one or two stools a day. This can hardly be called habit control. Control of the bowels is, however, quite possible and desirable for obvious reasons, perhaps in the majority of instances beginning around the third or fourth month. The use of a suppository, or soap stick, until a conditional reflex is established, is a justifiable and efficient method of establishing the habit at that age but, of course, must not be kept up indefinitely. Bladder control is a far more difficult thing to establish. There is "no danger, if any" in starting earlier, but success is rarely attained before the end of the first year, and only too frequently not for a long time after that. It is worth trying, however, somewhere between the middle and the end of the first year. Babies vary greatly in this respect, and some individualization is desirable. At best, "house breaking" is not as simple and easy in the baby as it is in the dog.

MUSCULAR OR NEURITIC DISTURBANCE

To the Editor:—I have an unusual case on hand of neuritis of the sensory nerves, involving the upper and lower extremities, the abdominal and chest muscles, the pectoral and intercostals and the fifth and eighth nerves. Pain, stiffness and a constriction-like feeling of the muscles are the common symptoms of each nerve section involved. There is no loss of reflexes or tackle sense. Deep muscular sense is altered. There is no paralysis, but the patient is confined in bed because of severe fatigue and myasthenia. The cranial nerves were involved last, although headache and pain in the cervical region occurred early. Blood counts, chemical examinations, the urine and the temperature remain normal. The case is of nine weeks' standing. Have you any information of such cases? Have any been reported in the literature? Any information as to the etiology and treatment will be appreciated, or any suggestion that may be of help in clearing up this case.

M.D., New York.

ANSWER.—The symptoms indicated do not suggest the diagnosis of a neuritis, and there is no possibility of making a diagnosis on the basis of the observations reported. It is possible that the primary disturbance is muscular rather than nervous.

DRIBBLING AFTER URINATION

To the Editor:—A patient is troubled by the persistent dribbling of a few drops of urine after voluntary micturition is finished. The amount is small, just enough to stain the underclothing, but is annoying to the patient and cannot be controlled. The urine is normal, as is the urinary tract, except for a history of an acute nonspecific prostatitis about five years ago. Kindly omit name.

M.D., Maryland.

ANSWER.—If the patient is old enough to have hyperplastic changes in the prostate gland, this may be the cause of the dribbling. Early in the course of prostatic hypertrophy the enlarging gland interferes with the sphincteric action, resulting in dribbling.

Disturbed innervation to the bladder from a cord lesion may also cause dribbling. The cause of the dribbling should be investigated both by cystoscopic examination and by a neurologic study.

RHEUMATIC NODULES IN RHEUMATIC FEVER

To the Editor:—A child, aged 11 years, has been confined to bed for nine weeks with acute rheumatic fever involving all the large joints and including the ribs. Heberden nodes have developed along the occipitoparietal suture. The child is suffering also from a mitral regurgitation from a previous attack. I should like to know whether these nodes have any relation to the rheumatic fever. I should also like to know whether you have heard of any cases similar to this.

NATHAN STEINBERG, M.D., Philadelphia.

ANSWER.—Heberden nodes are small, bony outgrowths occurring on the joint of the terminal phalanges. They are associated with hypertrophic osteo-arthritis and may be the first or the only manifestation.

The nodes described in the query are rheumatic nodules and are a frequent manifestation in rheumatic fever. They occur most typically at the tendinous insertions of the muscles, and the region described is one of the regions where they are most likely to be found. Next in order of frequency would probably be close to the wrist or elbow or the knees, but they may be found over the shoulder or hip or shoulder blades, and much less frequently elsewhere. They are a manifestation of rheumatic fever just as is arthritis, chorea or carditis. They should always be looked for in doubtful cases, in which they may be the determining manifestations.

CARCINOMA OF LARYNX

To the Editor:—Some very interesting figures and comments are made regarding carcinoma of the larynx in "Recent Advances in Radium" by Ward and Smith, published in 1933 by P. Blakiston's Son and Company (pages 197-201). Coutard's results using x-rays alone (21 per cent of eight year arrested cases) speaks favorably for irradiation (p. 200); while surgery, though results are equally good, gives a lesser degree of conservation of function and a varying operative mortality, which averages about 15 per cent. See also "Treatment of Cancer of the Larynx," K. Amersbach and L. Krause, *M. Klin.*, March 9, 1924.

The question of the form of therapy giving the best results is not settled, but it is my opinion that the following is as near the truth as we know it at the present time:

A. Intrinsic carcinoma with involvement of the vocal cords alone can be treated by either surgery or irradiation and the efficacy will be more dependent on the experience of the surgeon or radiologist than on the type of treatment. With irradiation there is a better conservation of the voice, with surgery the technical procedures have been established longer. Possibly the solution will be a combination of surgery and irradiation. At present, most workers are in favor of surgical treatment because of the following:

There is little difference recorded as yet between the results over comparable periods; because surgery has been long accepted as the method of treatment; most workers are surgeons. The last part of the foregoing statement is not meant to imply that the eminent laryngologists are biased but rather that it is only natural to view the stars through one's own telescope.

B. For lesions more advanced, i. e., with involvement of cartilage or glands, the treatment is palliative at the present time. Therapy should be either surgery plus radium (Hamer's method) or external irradiation.

HAROLD A. HILL, M.D., San Francisco.

MAPHARSEN AND SYPHILIS

To the Editor:—In Queries and Minor Notes in THE JOURNAL, July 18, page *232*, headed "Mapharsen and Syphilis," a question dealt with the treatment of a carpenter, aged 42, with secondary syphilis. After fourteen injections of mapharsen and ten injections of insoluble bismuth the patient was found to have a partially positive spinal fluid formula. It showed a two plus Wassermann reaction and a partially positive first zone colloidal gold curve. This has the appearance of a spinal fluid picture which is returning to normal and not that of fulminating nervous system involvement.

Tryparsamide was recommended in alternation with a heavy metal. Since an appreciable percentage of patients with secondary syphilis have positive spinal fluids and since in the majority of these patients spinal fluids become negative under a standard course of treatment of neoarsphenamine and a heavy metal, I think that routine treatment should at least have been mentioned in the answer. Only two arsenicals were discussed. One was mapharsen, the newest arsenical used in the treatment of syphilis, which has not been completely appraised. The other was tryparsamide, a quinquivalent arsenical, its usefulness limited to central nervous system syphilis. The method of choice it seems to me in this patient would be an intensive standard course of treatment with one of the proved arsphenamines, namely neoarsphenamine or arsphenamine in alternation with a heavy metal for a reasonable period before considering a very new or a highly specialized drug for the treatment of a very usual clinical variety of syphilis.

The answer satisfactorily covered the uses and limitations of mapharsen. It seems to have omitted, however, the standard treatment course as outlined by recent study of the Cooperative Clinic Group.

ARTHUR G. SCHOCH, M.D., Dallas, Texas.

Council on Medical Education and Hospitals

ADDITIONAL HOSPITALS APPROVED

The Council on Medical Education and Hospitals of the American Medical Association has given its approval to the following hospitals since the publication of the last previous list in THE JOURNAL, June 6, 1936:

Hospitals Approved for Intern Training

St. Luke's Hospital, Jacksonville, Fla.
Jennie Edmundson Memorial Hospital, Council Bluffs, Iowa.
St. Joseph's Mercy Hospital, Detroit.
St. Mary's Infirmary, St. Louis.
St. Mary's Hospital, Orange, N. J.
Aultman Hospital, Canton, Ohio.
Frankford Hospital, Philadelphia.

Hospitals Approved for Residencies in Specialties

Alameda County Hospital, Oakland, Calif. Medicine, obstetrics-gynecology and surgery.
Lutheran Hospital, Omaha. Neuropsychiatry.
Mercy Hospital, Canton, Ohio. Surgery.
State Sanatorium, Wallum Lake, R. I. Tuberculosis.

Hospitals Approved for Additional Residencies

Fairmont Hospital of Alameda County, San Leandro, Calif. Tuberculosis.
State University Hospital and Crippled Children's Hospital, Oklahoma City. Pathology and radiology.

Medical Examinations and Licensure

COMING EXAMINATIONS

STATE AND TERRITORIAL BOARDS

ALABAMA: Montgomery, June 29-July 1. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

ALASKA: Juneau, Sept. 1. Sec., Dr. W. W. Council, Juneau.

ARIZONA: Phoenix, Oct. 6-7. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: *Basic Science.* Little Rock, Nov. 2. Sec., Mr. Louis E. Gebauer, 701 Main St., Little Rock. *Medical (Regular).* Little Rock, Nov. 10. Sec., Dr. A. S. Buchanan, Prescott. *Medical (Eclectic).* Little Rock, Nov. 10. Sec., Dr. Clarence H. Young, 207½ Main St., Little Rock.

CALIFORNIA: Sacramento, Oct. 19-22. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, Oct. 6. Sec., Dr. Harvey W. Snyder, 422 State Office Bldg., Denver.

CONNECTICUT: *Basic Science.* New Haven, Oct. 10. *Prerequisite to license examination.* Address, State Board of Healing Arts, 1895 Yale Station, New Haven. *Medical.* Hartford, Nov. 10-11. *Endorsement.* Hartford, Nov. 24. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden.

DISTRICT OF COLUMBIA: Washington, Jan. 11-12. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

FLORIDA: Jacksonville, Nov. 16-17. Sec., Dr. William M. Rowlett, P. O. Box 786, Tampa.

GEORGIA: Atlanta, Oct. 13. Joint-Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

IDAHO: Boise, Oct. 6. Commissioner of Law Enforcement, Hon. Emmitt Pfost, 205 State House, Boise.

ILLINOIS: Chicago, Oct. 20-22. Superintendent of Registration, Department of Registration and Education, Mr. Homer J. Byrd, Springfield.

IOWA: *Basic Science.* Des Moines, Oct. 13. Sec., Prof. Edward A. Benbrook, Iowa State College, Ames.

KENTUCKY: Louisville, Dec. 2-4. Sec., State Board of Health, Dr. A. T. McCormack, 532 W. Main St., Louisville.

LOUISIANA: New Orleans, December. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MAINE: Portland, Nov. 3-4. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Regular.* Baltimore, Dec. 8. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, Dec. 8-9. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, Nov. 17-19. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413-F State House, Boston.

MICHIGAN: Lansing, Oct. 14-16. Sec., Board of Registration in Medicine, Dr. J. Earl McIntyre, 202-3-4 Hollister Bldg., Lansing.

MINNESOTA: *Basic Science.* Minneapolis, Oct. 6-7. Sec., Dr. J. Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis. *Medical.* Minneapolis, Oct. 20-22. Sec., Dr. Julian F. DuBois, 350 St. Peter St., St. Paul.

MONTANA: Helena, Oct. 6. Sec., Dr. S. A. Cooney, 7 W. 6th Ave., Helena.

NEBRASKA: *Basic Science.* Lincoln, Oct. 6-7. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEW HAMPSHIRE: Concord, Sept. 10-11. Sec., Board of Registration in Medicine, Dr. Charles Duncan, State House, Concord.

NEW JERSEY: Trenton, Oct. 20-21. Sec., Dr. James J. McGuire, 28 W. State St., Trenton.

NEW MEXICO: Santa Fe, Oct. 12-13. Sec., Dr. Le Grand Ward, Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 21-24. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, 315 Education Bldg., Albany.

NORTH CAROLINA: *Endorsement.* Raleigh, Nov. 30. Sec., Dr. Ben J. Lawrence, 503 Professional Bldg., Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 5-8. Sec., Dr. G. M. Williamson, 4½ S. 3rd St., Grand Forks.

OKLAHOMA: Oklahoma City, Dec. 9. Sec., Dr. James D. Osborn, Jr., Frederick.

OREGON: *Basic Science.* Portland, Nov. 21. Sec., Mr. Charles D. Byrne, University of Oregon, Eugene. *Medical.* Portland, Jan. 5-7. Sec., Dr. Joseph F. Wood, 509 Selling Bldg., Portland.

PUERTO RICO: San Juan, Sept. 1. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

RHODE ISLAND: Providence, Oct. 1-2. Chief, Division of Examiners, Mr. Robert D. Wholey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: Pierre, Jan. 19-20. Dir., Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.

VERMONT: Burlington, Feb. 10-12. Sec., Board of Medical Registration, Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, Dec. 9-13. Sec., Dr. J. W. Preston, 28½ Franklin Road, Roanoke.

WISCONSIN: *Reciprocity.* Madison, Sept. 8-9. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse. *Basic Science.* Madison, Sept. 26. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS. *Parts I and II.* Sept. 14-16. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

SPECIAL BOARDS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOGY: Philadelphia, June. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written* examination will be held simultaneously in different centers of the United States and Canada in December. *Practical* or *clinical* examination will be given in St. Louis in April. Chairman, Dr. Walter L. Bierring, 406 Sixth Ave., Des Moines.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: Written examination and review of case histories of Group B candidates will be held in various cities in the United States and Canada, Nov. 7. *Applications must be filed at least sixty days prior to the examination.* Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh (6).

AMERICAN BOARD OF OPHTHALMOLOGY: New York, Sept. 26. Sec., Dr. John Green, 3720 Washington Blvd., St. Louis.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Cleveland, Jan. 9. Sec., Dr. Fremont A. Chandler, 180 N. Michigan Ave., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: New York, Sept. 25-26. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

AMERICAN BOARD OF PEDIATRICS: San Francisco, Oct. 22-24. Baltimore and Cincinnati in November. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York, Dec. 29-30. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., Washington, D. C.

AMERICAN BOARD OF RADIOLOGY: Cleveland, Sept. 25-27. Sec., Dr. Byrl R. Kirklin, Mayo Clinic, Rochester, Minn.

AMERICAN BOARD OF UROLOGY: Chicago, Dec. 4-6. Sec., Dr. Gilbert J. Thomas, 1009 Nicollet Ave., Minneapolis.

Minnesota June Report

Dr. Julian F. Du Bois, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held in Minneapolis, June 16-18, 1936. The examination covered 12 subjects and included 60 written questions. An average of 75 per cent was required to pass. Thirty-one candidates were examined, 30 of whom passed and 1 failed. Five physicians were licensed by reciprocity and 1 physician was licensed by endorsement. The following schools were represented:

PASSED		
School	Year Grad.	Per Cent
Northwestern University Medical School	(1933)	91.4
University of Minnesota Medical School	(1934)	83.1, 87.5, (1935) 81.5, 82.1,* 83.1,* 90, (1936) 80.6, 83.4,* 83.4, 83.4, 84.5, 85.2,* 85.2, 85.3,* 86.3, 87,* 87, 87.2, 89.3,* 89.4, 90, 93.2*
Creighton University School of Medicine	(1933) 85.1, (1936)	82.5
University of Pittsburgh School of Medicine	(1931)	87.5
Marquette University School of Medicine	(1936) 85.2, 85.2,	87.2
University of Wisconsin Medical School	(1934)	87.3

FAILED	
School	Year Grad.
University of Minnesota Medical School	(1936)*

LICENSED BY RECIPROCITY		
School	Year Grad.	Reciprocity with
University of Arkansas School of Medicine	(1933)	Arkansas
University of Colorado School of Medicine	(1935)	Colorado
Northwestern University Medical School	(1930)	Illinois
University of Minnesota Medical School	(1935)	Louisiana
Queen's University Faculty of Medicine	(1926)	Wisconsin

LICENSED BY ENDORSEMENT		
School	Year Grad.	Endorsement of
University of Minnesota Medical School	(1935)	N. B. M. Ex.

* This applicant has received the M.B. degree and will receive the M.D. degree on completion of internship.

V 10
1936

Book Notices

Administration of Workmen's Compensation. By Walter F. Dodd. Cloth. Price, $4.50. Pp. 845. New York: Commonwealth Fund; London: Oxford University Press, 1936.

Ever since the enactment of the first workmen's compensation law in the United States, there have been almost continuous changes in the state statutes, commission regulations and methods of administration. All who are interested in workmen's compensation and in the problems of governmental administration will find this study helpful not only in its discussion of the many intricate problems involved but also in its presentation of those methods of administration which have proved most satisfactory. The author first presents a historical sketch in which he discusses the common law liability defenses as developed by the courts prior to the adoption of workmen's compensation laws. These common law defenses are the fellow servant doctrine, the assumption of risk, and contributory negligence. Insufficient compensation for the injured workmen, wastefulness of the system, delay, and antagonism between employer and employee are some of the conditions of the liability system which commissions and individuals sought to ameliorate in their search for a new remedy. This remedy was found in a form of insurance copied largely from English law and experience. The amount of discussion devoted to the various methods of administration of the workmen's compensation acts in the United States is an indication of the proportions to which the system has grown as an insurance business.

The primary objective in the early administration of workmen's compensation was to provide relief to employees while recovering from injuries. Medical care was largely incidental and not utilized to the best advantage in shortening the period of disability. Over the last twenty-five years the change in attitude toward the importance of medical care under workmen's compensation is in many instances striking. The author presents fairly the points of view of interested parties on medical problems that have demanded attention. Those who hope to find in this work of defense or encouragement of some of the unfair methods of providing medical care will be disappointed.

The compensation statutes, which with few exceptions make the employer, which means the insurer, responsible for paying medical benefits, have given these parties a financial interest in keeping medical costs as low as possible. This is done in most cases by the control of the employee's physician. The worst feature of this commercialization of medical practice by delivering bargaining power into the hands of a few has been the exploitation of the health of the employee.

The author recommends that all insurance and commercial clinics and hospital associations or other organizations which operate to treat industrial injury cases for profit should be abolished by law, and that the treatment of all compensation cases, except for first aid, should be confined exclusively to a panel of physicians nominated by the officers or a committee of the county medical society. He adheres to the principle that the employee should be given considerable voice in the selection of his own physician, thus encouraging the patient's confidence in the physician, an essential element in recovery. In other parts of this work there are discussions on types of insurance, regulation of insurance carriers, noninsurers, measures of compensation, workmen's compensation and accident prevention, lump sum settlements, noncompensable industrial injuries, administrative organization, and the progress of workmen's compensation.

The author expresses the opinion that "Much remains to be done toward bettering the content and administration of compensation laws. This need should not be lost sight of because of present movements for unemployment, old age and health insurance, including insurance for injuries that are not industrial. Workmen's compensation may be affected by these institutions, if they are adopted, but the compensation plan in its administration and in its actuarial basis must be kept separate if the cost of compensation is to continue as an expense charged to industry with respect to accidents and diseases attributable to the industry. . . . The charge to industry of the cost of workmen's compensation should not be united with other types of social insurance. Workmen's compensation should be an obligation of industry; other types of social insurance, if undertaken, should be an obligation of society, of which industry is but a part."

This work is timely and illuminating in many phases of workmen's compensation administration. In a study that appears to have been so carefully done, it is to be regretted that the author did not include some discussion of the efforts being made by cultists and irregular practitioners to establish themselves on an equal basis with the medical profession in the treatment of compensable injuries. In general this book will be welcome and valuable assistance to all who are interested in improving the administration of workmen's compensation in the United States.

Manual of Emergencies, Medical, Surgical and Obstetric: Their Pathology, Diagnosis and Treatment. By J. Snowman, M.D., M.R.C.P. Third edition. Fabrikold. Price, 10s. Pp. 401. London: John Bale, Sons & Danielsson, Ltd., 1936.

This little book has made an excellent impression. Packed within its covers is a wealth of sensible information and advice concerning the most urgent situations in medical and surgical practice. The general plan is to consider each condition under the headings of pathology and physiology, symptoms, diagnosis, prognosis and treatment. A wide field is covered. The first section deals with the dangerous emergencies in diseases of the respiratory system and includes hemorrhages, spasmodic laryngitis, spasm of the glottis, edema of the larynx, asthma, foreign bodies and injuries to the trachea, acute pulmonary edema, massive collapse of the lung, and pneumothorax. The second section deals with the emergencies of heart disease such as cardiac dyspnea, auricular fibrillation, anginal attacks, pericardial effusion and heart wounds. The common causes of sudden loss of consciousness and of convulsions are discussed. The short section dealing with intestinal obstruction, intussusception, strangulated hernia, acute pancreatitis and abdominal injuries adequately point out the more common danger signals. Twenty-four pages is devoted to emergencies occurring in connection with diseases of the urinary organs. The section on the various poisons is full and valuable. Seventy pages is devoted to the dangerous obstetric emergencies, including the hemorrhages of pregnancy, extra-uterine gestation, rupture of the uterus and eclampsia. This book is valuable to read in anticipation of emergencies; when they occur it will be a comfort to have it at hand.

Skaz y lyudini patologichna anatomiy, klinika patogenez, patofiziologiy. [By] N. M. Krol. Le rage chez l'homme: Anatomie pathologique, clinique, pathogénèse et pathophysiologie. Paper. Price, 7 krb. Pp. 355, with 33 illustrations. Kharkov: Derzhmedvidav, 1936.

This contribution from the Ukrainian Psychoneurologic Academy is based on a study of seventy-five clinical cases of rabies, in seventeen of which a histopathologic study was made. Eight of the latter group were studied by the method of serial sections of the entire cerebrospinal axis. The lesions were focal in character and were found at all levels. Two predominant groups were separated, the inflammatory and the degenerative. In some cases the glial proliferation resembled that of a postvaccination encephalitis and suggested the possible influence of antirabic inoculations. The author disagrees with K. Schaffer, who maintained that most pronounced inflammatory changes were found in the spinal cord segment corresponding to the level of the initial lesion (bite). The alterations of the glial cells were of the grave type described by Nissl. The author disagrees with the opinion of H. Pette and gives support to the view of Spielmeyer that there is nothing characteristic or pathognomonic about the alterations in rabies which would enable one to distinguish it from the various types of epidemic encephalitis. Thus, he believes, his observations substantiate one of the fundamental concepts of the general theory of infections of the nervous system; namely, the variability of alterations developing under the influence of the same infectious virus. His studies demonstrate the impossibility of differentiating on the histologic alterations alone between the rabies of the inflammatory type of reactions and the various types of epidemic encephalitis. The differentiation can be made on a combined clinical and histologic study, the finding of the Negri bodies and animal inoculations. The author makes an interesting attempt to correlate the clinical symptoms with pathologic alterations. He relates the complex of symptoms, which he designates as "sympathetic tempest," with the lesions of hypothalamus. While admitting the importance of Bonhoeffer's concept of nonspecificity of psychic reactions in infectious

psychoses, he believes that the brain may react in a specific manner in response to a particular infection. An extensive bibliography and a chart of differential histologic diagnosis of acute nonsuppurative infections of the central nervous system are appended.

The Chemistry of Natural Products Related to Phenanthrene. By L. F. Fieser, Associate Professor of Chemistry, Harvard University. Cloth. Price, $6.50. Pp. 358. New York: Reinhold Publishing Corporation, 1936.

The developments during the past few years in the chemistry and physiology of the sterols constitute one of the most fascinating stories in biologic and chemical research. Newly isolated sterols have provided the keys to many puzzling problems in physiology, pharmacology and therapeutics; but even this tremendously rapid growth represents only a small step in the much wider elucidation of fundamental biologic phenomena which the near future promises. Because the subject is relatively new and because its development has been so rapid, a comprehensive and critical evaluation of this field has become urgently necessary. This need has now been ably supplied by Professor Fieser with an unusually well written book. The author has reviewed the literature to Feb. 1, 1936; thus this volume contains all but the most recent contributions. The subjects covered include the chemistry of phenanthrenes, resin acids, cancer-producing hydrocarbons, sterols and bile acids, sex hormones, heart poisons and saponins. The text is replete with structural formulas. Data are presented on methods of extraction of naturally occurring products, on methods of synthesis (or "pseudo-synthesis") of these and related compounds and on their physiologic effects, so far as the latter are known. The elucidation of the chemical structure of these substances is considered at length. The bibliography is extensive. The author is to be congratulated on a beautifully concise and lucid presentation of a very difficult subject. This book will be an indispensable acquisition to the library of all those interested in this fundamental field.

Gefässmissbildungen und Gefässgeschwülste des Gehirns. Von Prof. Dr. Hilding Bergstrand, Direktor des Instituts für allgemeine Pathologie und pathologische Anatomie des Karolinischen Instituts in Stockholm, Prof. Dr. Herbert Olivecrona, Direktor der neurochirurgischen Klinik in Stockholm, und Prof. Dr. Wilhelm Tönnis, Leiter der neurochirurgischen Abteilung des staatlichen Luitpoldkrankenhauses in Würzburg. Paper. Price, 24 marks. Pp. 181, with 137 illustrations. Leipzig: Georg Thieme, 1936.

This work is another of the excellent series of monographs on neurosurgical subjects that have appeared from the Neurosurgical Clinics in Stockholm. In the present instance Professor Bergstrand of the Institute for General Pathology and Pathologic Anatomy, Stockholm, and Professor Tönnis of Würzburg have collaborated with Professor Olivecrona. The monograph presents in clear form the authors' experience in a large series of cases of vascular neoplasms and malformations, as well as a comprehensive review of the relevant literature. The authors have classified these lesions as follows:

1. Angioma cavernosum.
2. Angioma racemosum.
   (*a*) Telangiectasis.
   (*b*) Sturge-Weber's disease.
   (*c*) Angioma racemosum arteriale.
   (*d*) Angioma racemosum venosum.
   (*e*) Aneurysma arteriovenosum.
3. Angioreticuloma (hemangioblastoma of Cushing and Bailey, or Lindau's disease).
4. Angioglioma (of Roussy and Oberling).

The pathologic anatomy, symptomatology and treatment of each is discussed. The monograph is well illustrated. There is an extensive and comprehensive bibliography.

Experimentelle Undersøgelser over en transplantabel Leukose hos hvide Mus. Af H. C. Rask-Nielsen. [Experimental Studies on Transplantable Leukosis in White Mice]. With an English summary. Paper. Price, 12 kronor. Pp. 189, with 39 illustrations. Copenhagen: Levin & Munksgaard, 1936.

This doctorate thesis deals with the details of experiments on a transmissible leukosis in white mice, starting in a spontaneous instance. Successful transmission was obtained by subcutaneous or intravenous injection of leukosis cells in mice after roentgenization or injection of trypan blue. The peculiar cells were round and of varying size, a narrow rim of basophilic, nongranular cytoplasm enclosing a round or curved nucleus with a fine chromatin network and from two to five nuclei. These cells occurred in varying numbers in the blood as well as in local growths and infiltrations; there also developed myeloid hyperplasia in the marrow and spleen. Comparing this instance with previously described forms of transmissible mammalian leukosis, it appears that Korteweg observed a similar variety in 1929. These two instances are peculiar mainly in that a sudden neutrophil leukocytosis developed before the appearance in the blood of the characteristic cells. As in other forms, the disease in the present case depended on the proliferation of malignant cells, which the author suggests may have been immature and pathologic myeloblasts.

L'Immunité au cours de la tuberculose: Etude expérimentale et clinique. Par Jean Paraf. Préface du Professeur F. Bezançon. Bibliothèque de phtisiologie, sous la direction de Léon Bernard. Paper. Price, 30 francs. Pp. 141. Paris: Masson & Cie, 1936.

This book, which is a new monograph in the well known "Bibliothèque de phtisiologie," founded by Léon Bernard, is a brief but interesting exposition, the central theme of which appears to be rationalization of BCG vaccination on the basis of immunology, and removal of the method from the field of empiricism. As such it is worth the attention of all physicians interested in this subject. An important rôle in immunity is ascribed to allergy, which, in the words of the author and Jules Bordet, if not part of immunity at least comes to its assistance. In Paraf's experience the most resistant infants and animals vaccinated with BCG are those in which a mild superinfection with virulent bacilli from without has increased the degree of allergy. Tuberculin treatment and the therapeutic use of BCG are discussed in the light of their relation to allergy.

Prostitution in the Modern World: A Survey and a Challenge. By Gladys Mary Hall, M.A. With an Introduction by Charles E. Raven, D.D., Regius Professor of Divinity, Cambridge. Cloth. Price, $2. Pp. 200. New York: Emerson Books, Inc., 1936.

This volume stresses the great changes in the problem of prostitution resulting from the effects of the great war. The most significant change, the increase in the noncommercial form of promiscuous sex relationships, leads the author to define prostitution "to include paid and unpaid forms of sex promiscuity," a definition at marked variance with almost all other writers, who make barter an essential element in prostitution. Except for Great Britain, only fragmentary data are presented on the extent and practice of prostitution and the nature and effectiveness of legislation on prostitution in the chief countries of the world. The conclusion is reached that commercialized prostitution is decreasing and that unpaid for promiscuity is increasing in nearly all the countries of the world. In the United States both forms of promiscuity are reported to have increased. The data presented, however, are insufficient to show the increase of commercial prostitution in this country and no reference is made to Vice in Chicago by W. C. Reckless, with its detailed statistics on this point for one American city. Important factors in prostitution, according to the author, are in women (1) desire for luxuries rather than economic need, (2) housing and neighborhood conditions due to poverty, (3) loneliness, monotony or other work conditions, (4) alcohol, (5) assault in childhood, (6) knowledge of contraceptives, (7) mental defect in a smaller proportion of cases than generally supposed, (8) temperament, (9) desire for sex experience, and in men (1) a social belief in the masculine need for sex relations, (2) curiosity and adventurousness of youth, (3) marital maladjustment, and (4) demand for sex relations as an important individual experience. Two chapters are devoted to traffic in women and children and to the results of sexual promiscuity and abstinence. The final chapter is a challenging reply to the new morality which consists "in the view that temporary unpaid sex relations outside marriage are not merely permissible but desirable, not only as preparation for marriage or without prospect of marriage, but during marriage itself and with the knowledge and acquiescence of the marriage partner." The author's conclusion that "the need, on occasion, for a deliberate canalizing of the creative energy in the direction of other than sexual purposes" is a statement of her own convictions rather than a generalization from her data. Although the volume contains useful comparative data, it falls far short of an adequate treatment of its subject. Its defects are chiefly due to the unwarranted extension of the term prosti-

V 10
1936

tution to include all sexual promiscuity and to the difficulties inherent in an attempt to make a world-wide survey of the problem in the absence of scientific studies in the different countries.

Undersøgelser over en Gruppe Actinomyceter isolerede fra menneskets svælg. Af Rigmor v. Magnus. [Studies on a Group of Actinomycetes Isolated from Human Pharynx]. With an English summary. Paper. Price, 6 kronor. Pp. 132, with 4 illustrations. Copenhagen: Levin & Munksgaard, 1936.

In 1923 Orskov demonstrated the presence of branching organisms in the human pharynx. This discovery depended mainly on direct microscopic observation of growing cultures on agar; in making smears in the usual way the branchings are easily broken up. The present report, which is a thesis for the doctor's degree, presents the results of an extensive study of this group of organisms, 130 strains of which were isolated from the pharynx and nasopharynx. The culture and other characteristics of the organisms, which appear to be non-pathogenic, are described. An interesting observation is that most of the strains, especially those belonging to the acid group, produce the enzyme which by its action on human red blood corpuscles renders them agglutinable to human serum in general, including the serum of the person whose corpuscles are examined (the so-called T agglutination described by Thomsen).

The Medical Formulary and Prescription Manual: A Treatise on Prescriptions and Prescription Writing. By Morris Dauer, Ph.G., Chief Pharmacist at Kings County Hospital, Borough of Brooklyn, City of New York. Approved and adopted by the Department of Hospitals, City of New York, September 13, 1934. Fabrikold. Pp. 297. Brooklyn, N. Y.: The Author, 1935.

This little volume contains a great deal of valuable information on the prescription and compounding of medicinal agents. It includes, in addition to descriptive material and tables of various kinds, 957 separate preparations. Even allowing for duplication in different dosage forms of the same drug, the number of remedies in this formulary surely exceeds the necessities of rational therapeutics. Many irrational mixtures are included; the section on glandular preparations, which contains such preparations as "Tablet of Pineal Gland" and "Tablet of Suprarenal Gland," is particularly objectionable. It is not clear why almost the whole range of therapeutic substances should be covered separately as "Diabetic Medicinal Preparations." The prescriptions are numbered consecutively throughout the book; this leads readily to prescribing by number, a hazardous practice which has caused many accidents. It is hoped that in future revisions of this volume the objectionable features will be eliminated (the author might with benefit consult N. N. R. and Useful Drugs). Much of the material is excellent and it is unfortunate that a book otherwise so useful should contain so much irrational material. The printing and binding are unusually well done.

Die Porphyrine: ihr Nachweis, ihre Physiologie und Klinik. Von Dr. med. habil. Curt Carrié, Assistent an der Hautklinik der Medizinischen Akademie in Düsseldorf. Boards. Price, 9 marks. Pp. 103, with 34 illustrations. Leipzig: Georg Thieme, 1936.

This is an interesting review of the significance of the porphyrins in biology and clinical medicine. The porphyrins are chemically closely related to the other blood pigments (hemin, bile pigment) and to chlorophyll. The chemistry of the porphyrins is discussed from the medical standpoint. Blood pigment, porphyrins and chlorophyll are composed of four heterocyclic pyrrol rings, to which methyl and ethyl groups are attached. The chemical formulas of the more important compounds are described. Then the qualitative and quantitative methods of isolation are given. The biologic properties of the porphyrins are numerous. The best known is their photosensitizing action. These substances have a special affinity for the skeletal system. Porphyrins have been found normally in the red blood cells, urine, bone marrow and other structures. Porphyrins are increased in the urine in various febrile diseases that lead to red blood cell destruction; also after arsenic medication and in malaria, pernicious anemia and hemolytic icterus. Liver cell destruction also causes an increased excretion. The clinical forms of porphyrinuria, acute, congenital and toxic, are described. The porphyrinopathies are divided into (1) primary and (2) secondary. There is a bibliography of 252 references and an index.

Les encéphalites aiguës post-infectieuses de l'enfance. Par Marlé-Thérèse Comby. Préface du Dr. J. Comby. Paper. Price, 30 francs. Pp. 172, with 6 illustrations. Paris: Masson & Cie, 1935.

The term "encephalitis" has come into general use only since the great epidemic swept the world in 1917-1919. Prior to that time acute encephalitis was not recognized except for those types due to syphilis, trauma or sepsis. Many cases caused by other agents, presumably the filtrable viruses, have now come to light. This volume gives the reports on forty-five patients, all children, showing a wide variety of symptoms and signs pointing to a diffuse lesion in the brain. Epidemic (lethargic) encephalitis is excluded. The group is diffuse. Some cases followed vaccination; others followed chickenpox, measles, scarlet fever, diphtheria and other childhood diseases. Others appeared without preceding disease. The presentation of such a wide variety of material, without more complete classification, only leads to confusion. Although the bibliography is somewhat useful, the book itself cannot be highly recommended.

A Third Index of Patented Mothproofing Materials. By R. C. Roark and R. L. Busbey. Division of Insecticide Investigations, Bureau of Entomology and Plant Quarantine, United States Department of Agriculture, Washington, D. C. Paper. Pp. 104. Washington, D. C., 1936.

This volume is just what its title indicates it is. Patent numbers are given and the patents briefly described. Toxicities and allergic reactions are not mentioned.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Accident Insurance: Streptococcic Infection or Staphylococcic Infection as Cause of Death. — The defendant insurance company agreed to pay certain benefits if the death of the insured resulted "directly and independently of all other causes from bodily injury effected solely through external, violent and accidental cause." These benefits were not to be payable if the death resulted from "physical or mental infirmity; or directly or indirectly from illness or disease of any kind." The insured slipped on the back steps of his house and fell, sliding down several steps. A boil that he had on his right arm was found to be broken and bleeding after the fall, but the insured appeared to be in good physical condition and made no complaint of being in pain. On the night of the day following the fall, however, he was restless and suffered pain in the region of his left buttock. The following morning he walked with a limp, dragging his left leg. A painful red area about the size of the palm of the hand developed on his left buttock and he was forced to go to bed. At times his temperature was normal and at other times he had alternate periods of sweating and fever and chills. He grew worse during the next few days and continually indicated the pain in his left buttock as the cause of his suffering. On the third and fourth days after the fall, swelling set in about the insured's knees. He died on the seventh day after the fall from "septicemia, septic pneumonia, and septic arthritis." The beneficiary obtained judgment in the trial court and the insurance company sought a reversal of that judgment in the Supreme Judicial Court of Massachusetts.

The defendant contended that staphylococci, coming from the boils from which the insured suffered periodically during his lifetime, caused the death and that the causation was not affected by the fall. The beneficiary argued, on the other hand, that the fall activated otherwise harmless streptococci present in the body of the insured. Two physicians, testifying for the beneficiary, in answer to hypothetical questions, stated that the fall caused lowered resistance of tissues in the region of the left buttock, activating streptococci, which in a harmless form are present in every one, and that the infection spread through the blood stream to the insured's knees, developing into septic arthritis. These witnesses admitted that the septicemia might have been brought about by staphylococci from the boils, as was contended by the medical witnesses for the

insurance company, but testified that the symptoms were more properly referable to a conclusion of streptococcic infection. The alternately high and low temperatures and involvements of the joints, as well as other symptoms, were typical of streptococcic infection and not consistent with staphylococcic infection, which, if it had started from boils, would have become active sooner than it did. Staphylococcic infection, the witnesses continued, is marked by a uniformly high temperature with no long swings from one extreme to the other.

The testimony for the beneficiary, the court concluded, was sufficient to justify a submission of the question to the jury, and the court could find no reason to disturb the judgment for the beneficiary.—*Kramer v. New York Life Ins. Co. (Mass.), 200 N. E. 390.*

Health Departments: Records as Public Documents.—The appellant, Dr. P. E. Marks, was the superintendent of the bureau of infectious diseases of the city of Pittsburgh. In connection with a pending suit by a beneficiary against an insurance company, Dr. Marks was served with a subpena requiring him to produce the records of his bureau relative to the insured, showing when the insured was reported to the bureau as being tuberculous. Dr. Marks appeared in court pursuant to the subpena but, on the advice of the city solicitor, refused to produce the records on the ground that it would be against public policy so to do. The court adjudged the witness to be in contempt of court. Thereupon Dr. Marks appealed to the superior court of Pennsylvania.

There is, said the court, no express statutory provision that the data compiled by the department of health shall constitute public records, except in a very few instances, and the expression of these few instances implies the exclusion of the rest. An examination of the statutes relating to the department of health shows two broad general aims and purposes in view: (1) the collection of vital statistics, such as births, deaths and marriages; (2) the preservation of the public health and the prevention of disease. Data under the first class are gathered for public use and inspection, and the statutes requiring them to be furnished provide that official certificates of the statistics so furnished shall be given to the public on the payment of a small fee. These are public documents, receivable in evidence as an exception to the hearsay rule. But information gathered or received for the preservation of the public health and the prevention of disease is not always and in all cases designed or intended for inspection by the public. It may be contrary to the public interest to allow it to be made public. In the absence of statutory pronouncement on this subject, the officer in charge must be allowed to decide what information so received is proper for publication or general inspection and what should be withheld in the public interest. The court expressed itself as in agreement with the statement made by the assistant city solicitor, who presented this case on appeal, as follows:

> These records are in no true sense of the words "public records"; they are departmental records. To thwart the important functions of the Health Department by placing their confidential data in the hands of the general public would effectively impair the important work performed by this Department in the prevention, control and treatment of infectious diseases. It is earnestly submitted that the interests of the public in protecting itself and those afflicted with dangerous infectious diseases far outweighs any benefit that insurance companies or other litigants might gain by reason of ready access to departmental records.

The judgment of the trial court, adjudging the witness in contempt, was therefore reversed.—*In re Marks (Pa.), 183 A. 432.*

Malpractice: Liability of Anesthetist for Injury to Patient's Eyes Due to Ether.—The plaintiff underwent an operation for the removal of a thyroid cyst. The defendant, a physician, was engaged to administer the anesthetic. He was assisted by a nurse provided by the hospital. Alleging that the defendant negligently administered the ether, resulting in serious injury to her eyes, the plaintiff sued the defendant. At the close of the evidence, a motion by the defendant for a directed verdict was denied. A verdict was rendered for the plaintiff, and the defendant appealed to the Supreme Judicial Court of Massachusetts.

There is no evidence, said the Supreme Judicial Court, that the defendant did not possess the standard of skill which the law requires him to possess, nor is there any testimony in the record that the defendant departed from the usual technic in handling the anesthetic. The fact, warranted by the evidence, that the plaintiff's eyes were injured by the administration of ether by the defendant does not alone warrant the inference of fault on the part of the defendant. In the absence of expert affirmative evidence of fault in the administration of ether, the basic question is whether the defendant in administering the ether did use the care and skill which the law requires. There is nothing in the record to exclude the reasonable inference, the court said, that the nurse in pouring the liquid ether spilled it on the outside of the cone and that it found its way to the plaintiff's eyes to their harm. If such was the fact, the defendant was not responsible. The nurse was furnished by the hospital and there is no evidence that the defendant directed or failed to direct her other than to say that the liquid ether she poured into the cone was "enough." In the opinion of the court, the trial court should have directed a verdict for the defendant. The Supreme Judicial Court, therefore, entered judgment for the defendant.—*Klucken v. Levi (Mass.), 200 N. E. 566.*

Society Proceedings

COMING MEETINGS

Academy of Physical Medicine, Boston, Oct. 20-22. Dr. Franklin P. Lowry, 313 Washington St., Newton, Mass., Secretary.

American Academy of Ophthalmology and Otolaryngology, New York, Sept. 26-Oct. 3. Dr. William P. Wherry, 107 South 17th St., Omaha, Executive Secretary.

American Association of Industrial Physicians and Surgeons, Atlantic City, N. J., Oct. 5-6. Dr. Volney S. Cheney, Armour and Co., Union Stock Yards, Chicago, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Bretton Woods, N. H., Sept. 14-16. Dr. James R. Bloss, 418 Eleventh St., Huntington, W. Va., Secretary.

American Clinical and Climatological Association, Richmond, Va., Oct. 19-21. Dr. Francis M. Rackemann, 263 Beacon St., Boston, Secretary.

American College of Surgeons, Philadelphia, Oct. 19-23. Dr. Allen B. Kanavel, 40 East Erie St., Chicago, Secretary.

American Congress of Physical Therapy, New York, Sept. 7-11. Dr. Nathan H. Polmer, 921 Canal Street, New Orleans, Secretary.

American Hospital Association, Cleveland, Sept. 28-Oct. 2. Dr. Bert W. Caldwell, 18 East Division St., Chicago, Executive Secretary.

American Public Health Association, New Orleans, Oct. 20-23. Dr. Reginald M. Atwater, 50 West 50th St., New York, Executive Secretary.

American Roentgen Ray Society, Cleveland, Sept. 29-Oct. 2. Dr. Eugene P. Pendergrass, 3400 Spruce St., Philadelphia, Secretary.

Associated Anesthetists of the United States and Canada, Philadelphia, Oct. 19-23. Dr. F. H. McMechan, 318 Hotel Westlake, Rocky River, Ohio, Secretary.

Central Association of Obstetricians and Gynecologists, Detroit, Oct. 15-17. Dr. Ralph A. Reis, 104 South Michigan Blvd., Chicago, Secretary.

Colorado State Medical Society, Glenwood Springs, Sept. 9-12. Mr. Harvey T. Sethman, 1612 Tremont Place, Denver, Executive Secretary.

Delaware, Medical Society of, Rehoboth, Oct. 12-14. Dr. William H. Speakman, 917 Washington St., Wilmington, Secretary.

Idaho State Medical Association, Boise, Aug. 31-Sept. 4. Dr. Harold W. Stone, 105 North Eighth St., Boise, Secretary.

Indiana State Medical Association, South Bend, Oct. 6-8. Mr. Thomas A. Hendricks, 23 East Ohio St., Indianapolis, Executive Secretary.

Inter-State Postgraduate Medical Association of North America, St. Paul, Oct. 12-16. Dr. W. B. Peck, 27 East Stephenson St., Freeport, Ill., Managing Director.

Kansas City Southwest Clinical Society, Kansas City, Mo., Oct. 5-8. Dr. J. V. Bell, 1103 Grand Ave., Kansas City, Mo., Secretary.

Kentucky State Medical Association, Paducah, Oct. 5-8. Dr. Arthur T. McCormack, 532 W. Main St., Louisville, Secretary.

Michigan State Medical Society, Detroit, Sept. 21-24. Dr. C. T. Ekelund, 35 West Huron St., Pontiac, Secretary.

Mississippi Valley Medical Society, Burlington, Iowa, Sept. 30-Oct. 2. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

Nevada State Medical Association, Reno, Sept. 25-26. Dr. Horace J. Brown, 20 North Virginia St., Reno, Secretary.

Northern Minnesota Medical Association, Fergus Falls, Aug. 31-Sept. 1. Dr. Oscar O. Larsen, Detroit Lakes, Secretary.

Ohio State Medical Association, Cleveland, Oct. 7-9. Mr. C. S. Nelson, 79 East State St., Columbus, Executive Secretary.

Oregon State Medical Society, The Dalles, Oct. 8-10. Dr. Morris L. Bridgeman, 1020 S.W. Taylor St., Portland, Secretary.

Pennsylvania, Medical Society of the State of, Pittsburgh, Oct. 5-8. Dr. Walter F. Donaldson, 500 Penn Ave., Pittsburgh, Secretary.

Southern Minnesota Medical Association, Albert Lea, Aug. 30-31. Dr. Harold C. Haben, 102 Second Ave., Rochester, Secretary.

Virginia, Medical Society of, Staunton, Oct. 13-15. Miss Agnes V. Edwards, 1200 East Clay St., Richmond, Secretary.

Washington State Medical Association, Yakima, Aug. 31-Sept. 2. Dr. Vernon W. Spickard, 1303 Fourth Avenue, Seattle, Secretary.

Wisconsin, State Medical Society of, Madison, Sept. 8-11. Mr. J. G. Crownhart, 119 East Washington Avenue, Madison, Secretary.

V 107
1936

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers in continental United States and Canada for a period of three days. Periodicals are available from 1926 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them. Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

11: 641-776 (June) 1936

Inadequacy of Normal Collateral Coronary Circulation and Dynamic Factors Concerned in Its Development During Slow Coronary Occlusion. C. J. Wiggers, Cleveland.—p. 641.

*Significance of Rheumatic Fever in Etiology of Coronary Artery Disease and Thrombosis. H. Gross and B. S. Oppenheimer, New York. —p. 648.

Arm-to-Carotid Circulation Time in Prolonged Therapeutic Fever. I. Kopp, Boston.—p. 667.

Ligation of Coronary Arteries in Javanese Monkeys: I. Introduction, General Experimental Results, Especially Changes in Ventricular Electrocardiogram. A. de Waart, C. J. Storm and A. K. J. Koumans, Batavia, Java.—p. 676.

*Use of Intermittent Venous Compression in Treatment of Peripheral Vascular Disease: Preliminary Report. W. S. Collens and N. D. Wilensky, Brooklyn.—p. 705.

Apparatus for Production of Intermittent Venous Compression in Treatment of Peripheral Vascular Disease. W. S. Collens and N. D. Wilensky, Brooklyn.—p. 721.

Auricular Sound. P. Cossio and E. G. Fongi, Buenos Aires, Argentina, South America.—p. 723.

Electrocardiographic Changes Following Coronary Sinus Occlusion in the Dog's Heart. L. Gross, Gertrude Silverman and A. M. Master, New York.—p. 734.

Digitalis Eosinophilia. J. Romano and A. J. Geiger, New Haven, Conn. —p. 742.

Functional Capacity of Normal Pericardium: Experimental Study. M. H. Fineberg, Cleveland.—p. 748.

Rheumatic Fever and Coronary Artery Disease and Thrombosis.—Gross and Oppenheimer studied the postmortem material of 3,264 cases, in which they found thirty instances of coronary arteriosclerosis concomitant with rheumatic valvular disease. They believe that the association may have been purely coincidental. Either the valvular or the vascular lesion predominated and apparently was responsible for the clinical picture observed during life. There was no proved etiologic relationship between the initial valvular lesion and the subsequent development of coronary arteriosclerosis. The two lesions may be independent and unrelated. If a causal relationship did exist, coronary arteriosclerosis would occur with greater frequency at an earlier age in patients with rheumatic heart disease. The coronary arteries of young patients with rheumatic heart disease are usually free of arteriosclerotic changes. Despite the rather frequent involvement of the coronary arteries during the course of acute rheumatic fever, it has not been possible to establish such an entity on clinical grounds. To diagnose coronary disease from the electrocardiogram is unsafe. Published electrocardiograms indicating such relationship are equivocal, since similar changes may appear during acute rheumatic fever, aortic insufficiency, pericarditis or coma. Though the association of rheumatic valvular disease and coronary sclerosis is a rarity and the diagnosis is difficult, it has seemed to the authors that in some cases such a diagnosis might be suspected. In an individual with signs and symptoms of rheumatic heart disease who survives middle life and later develops anginal pain not attributable to aortic disease, active rheumatic fever or pericarditis, the coexistence of coronary disease is to be suspected. Rare cases of angina pectoris in mitral stenosis without evidence of active rheumatic fever occur. In the absence of aortic insufficiency, an electrocardiogram may be of great help. The greatest and most significant reason for the very infrequent association of rheumatic and coronary disease is that rheumatic fever appears early in life and ordinarily runs its course before the usual period of degenerative heart disease. In several instances of severe coronary sclerosis the associated rheumatic valvular lesions were insignificant and such as are frequently found at necropsy of persons dying of other diseases. Similarly, in several cases of advanced rheumatic valvular disease the coincidental arteriosclerotic lesions of the coronary arteries were of no significance. In still others neither the vascular nor the valvular lesion was of more than pathologic interest, and the patient had presented neither history nor symptoms indicative of rheumatic heart disease or coronary arteriosclerosis. Cases may be cited of rheumatic subjects at or beyond middle life in whom coronary disease corresponds roughly to the age of the individual.

Intermittent Venous Compression in Treatment of Peripheral Vascular Disease.—Collens and Wilensky endeavored to incorporate the beneficial effects of venous obstruction and release in the treatment of peripheral vascular disease by utilizing an apparatus designed to produce alternating periods of venous congestion and release of congestion. Sustained venous compression at from 30 to 60 mm. of mercury for two minutes followed by a release of this pressure for another two minutes resulted in clinical benefits. The technic consisted of applying venous compression at the midthigh, alternating with release in periods of two minutes for as long as twelve hours continuously each day. The criteria employed in determining the effectiveness of treatment consisted of (1) a walking test, (2) a hot water immersion test (Landis), (3) oscillometric readings, (4) relief of pain, (5) healing of ulcers and (6) effect of treatment on skin temperature. Following treatment there was relief of pain, increase of skin temperature of the extremity, increase in walking efficiency, increase in vascularity (permitting amputation at lower levels) and healing of chronic indolent ulcers associated with vascular obstruction.

American Journal of Cancer, New York

27: 217-420 (June) 1936

Hormone Pathogenesis of Adenocarcinoma of the Breast. A. Lacassagne, Paris, France.—p. 217.

Effect of Injections of Estrin on Incidence of Mammary Cancer in Various Strains of Mice. V. Suntzeff, E. L. Burns, Marian Moskop and L. Loeb, St. Louis.—p. 229.

Breaking Down Resistance of Albino Mice to Transplantation of Tumors Induced by 1: 2: 5: 6-Dibenzanthracene in Different Strain of Albino Mice. M. R. Lewis and E. G. Lichtenstein, Baltimore.—p. 246.

Experimental Production of Malignant Tumors in Albino Rat by Means of Ultraviolet Rays. H. H. Beard, T. S. Boggess and E. Von Haam, New Orleans.—p. 257.

Spindle-Celled Tumors and Leukemia in Mice After Injection with Water Soluble Compound of 1: 2: 5: 6-Dibenzanthracene. H. Burrows and J. W. Cook, London, England.—p. 267.

Benign Hepatomas in Mice of CBA Strain. L. C. Strong and G. M. Smith, New Haven, Conn.—p. 279.

*Chemotherapy Investigations in Cancer, with Reference to Influence of Some Lead Preparations on Tar Tumors in Mice. D. L. Woodhouse, Birmingham, England.—p. 285.

Further Study of Effect of Cyanide on Rat Sarcoma. J. C. Krantz Jr., Ruth Musser, C. J. Carr and W. G. Harne, Baltimore.—p. 293.

Spectrographic Studies of Cancer and Normal Blood Plasma. I. Absorption Spectrums of Fractionated Cancer and Normal Rat Blood Plasma. A. J. Allen, Rachel G. Franklin and E. B. Sanigar, Philadelphia.—p. 296.

Id.: II. Absorption Spectrums of Fractionated Cancer and Normal Human Blood Plasma. Rachel G. Franklin, E. B. Sanigar and A. J. Allen, Philadelphia.—p. 301.

Sex Hormones and Prostatic Pathology. S. E. Owen and M. Cutler, Hines, Ill.—p. 308.

*Multiple Primary Cancers. M. Burke, Madison, Wis.—p. 316.

Chondroblastic Sarcoma: Note. H. Bergstrand, Stockholm, Sweden. —p. 326.

Some Notes on Malignancies of the Heart. J. A. Pollia and L. J. Gogel, Los Angeles.—p. 329.

Problems in Diagnosis of Cancer of Stomach. A. J. Delario, Paterson, N. J.—p. 334.

Hemangioma of the Male Breast: Case Report. C. C. Johnston, Baltimore.—p. 341.

Chemotherapy Investigations in Cancer.—Woodhouse concludes from his experiments that not one of the lead compounds investigated was a suitable agent for controlling frankly malignant growths. It is possible that in those cases in which the lead injections caused inhibition of growth the epitheliomas were less active than usual. This is in keeping with the conclusion of Eggers, who found that some hexose-lead compounds were able to cause rat tumors of low virulence to disappear but had no influence on the more malignant sarcoma 39. In the author's experience true epitheliomas produced by tar in mice are very lethal, although the percentage of metastases is not high. He finds, therefore, that even compounds such as

benzene-sulfonyl-glycine, which are able to oppose grafted tumors with a good measure of success, do not appreciably inhibit the more "virulent" strain of neoplasm. It is felt, however, that the type of tumor utilized in the investigation is more closely allied to spontaneous cancer, and, if experiment should devise a nontoxic substance capable of destroying this form of growth, the greater part of human cancers would come within its sphere of attack.

Multiple Primary Cancers.—Because multiple primary cancers have been found to occur oftener than expected among necropsy cases at the State of Wisconsin General Hospital, Burke tabulates such cases and computes their incidence. In a period of eleven years ended in October 1935, 2,889 deaths occurred and 2,033 necropsies were performed; 583 disclosed cancer, an incidence of 28.6 per cent, which approximates that found at Michigan and at the Mayo Clinic and apparently reflects a certain degree of selectivity in these institutions for cancer patients. There were forty-six cases of multiple primary cancers, representing an incidence of 7.8 per cent, thus far the highest to be reported in any series of cases, surgical (morbidity) or necropsy (mortality). Thirty-five of the cases occurred in males, eleven in females. However, the entire necropsy series discloses a 2:1 preponderance of males over females. The heredity factor was positive in fourteen cases, negative in twelve cases and incomplete or unelicited in twenty cases. Except in four cases the tumors were synchronous. In seven of the cases one of the tumors was a sarcoma. The commonest type of multiple cancer, the basal-cell epithelioma, was conspicuous for its rarity in the series (three instances). Besides the forty-six cases there was a miscellaneous collection of seventeen cases failing for one reason or another to satisfy fully the criteria for multiple malignant conditions. A cancer is defined as a definite, atypical, invasive growth; it is not mere local hyperplasia; in the absence of metastases it must show definite local invasive activity. Nine of these cases showed one true cancer and an atypical, invasive hyperplasia of the prostatic epithelium that had not yet reached the stage at which it could be considered a definite tumor. Two cases represented an analogous condition in which the bladder epithelium and a gastric myoma were exhibiting the invasive tendency. In one case there was one malignant tumor and an embryonic rest from Rathke's pocket in the proper site for a possible craniopharyngioma. In two cases there was one malignant growth and another tumor, benign histologically but fatal. There was one case each of embryonic carcinoma of the kidney pelvis with multiple papillomas of the larynx with recurrences after radium therapy, adenocarcinoma of the stomach with lymphosarcoma of mesenteric origin and fibrillar astrocytoma of the brain (cerebellum) in which a retinoscope revealed a tumor in the right eye, removal of which was not permitted at necropsy. The author's series shows a higher incidence of multiplicity, 7.8 per cent, than any thus far reported. Inclusion of any or all of the seventeen cases not satisfying the criteria for multiple growths would raise the figure to 10.8 per cent if all were included. Any factor producing an increase in single cancers is bound to produce at least a corresponding increase in multiple cancers, and as one consequence of this increase the notion of rarity formerly associated with this condition has vanished. It is not unlikely that in an appreciable number of cases now coming to necropsy because of cancer itself another true or incipient cancer would be found if complete and careful microscopic examination were the rule. Such examination of current necropsy material is apt to reveal not just an absolute but a relative increase in multiple cancers.

American Journal of Orthopsychiatry, Menasha, Wis.

6: 183-340 (April) 1936

Hostility Patterns in Sibling Rivalry Experiments. D. M. Levy, New York.—p. 183.
Evaluation of Masculinity Factor in Boarding Home Situations. O. B. Markey and Helen Noble, Cleveland.—p. 258.
First Interviews, as an Experiment in Human Relations. E. V. Emery, New Haven, Conn.—p. 268.
Preliminary Standardization of Vineland Social Maturity Scale. E. A. Doll, Vineland, N. J.—p. 283.
Treatment Technics for Mental Retardation in a School for Personality Disorders in Children. N. W. Ackerman and C. F. Menninger, Topeka, Kan.—p. 294.

Annals of Internal Medicine, Lancaster, Pa.

9: 1619-1808 (June) 1936

Disturbances of Endocrine Balance and Their Relation to Diseases of Metabolism. C. N. H. Long, Philadelphia.—p. 1619.
Comparison of Effectiveness of Glutamic Acid Hydrochloride and Dilute Hydrochloric Acid as Replacement Therapy in Anacidity Measured by Fractional Gastric Acid Titration and Hydrogen Ion Concentration Curves. H. Shay and J. Gershon-Cohen, Philadelphia.—p. 1628.
The Medical and Economic Advantages of Roentgenographic Chest Survey of All Hospital Admissions. F. J. Hodges, Ann Arbor, Mich.—p. 1639.
Chronic Arthritis: A General Disease Requiring Individualized Treatment. E. E. Irons, Chicago.—p. 1658.
Treatment of Pneumonia with Serum Containing Type-Specific, Heterophile and Neutralizing Antibodies. V. B. Callomon and J. Ungar Jr., Pittsburgh.—p. 1664.
Some Factors in Etiology of Psychoneuroses. L. Casamajor, New York.—p. 1677.
Solitary Ulcer of Ileum and Ulcer of Meckel's Diverticulum. P. W. Brown and J. deJ. Pemberton, Rochester, Minn.—p. 1684.
*Errors in Interpretation of Cardiovascular Symptoms and Signs. P. D. White, Boston.—p. 1703.
*Initial Ventricular Complex of Electrocardiogram in Coronary Thrombosis. L. Feldman, Chicago.—p. 1714.
Late Recrudescence in Encephalitis Lethargica with Succession of New Manifestations at Intervals of Years: the Problem of Prognosis. A. Gordon, Philadelphia.—p. 1725.

Errors in Interpretation of Cardiovascular Symptoms.—White enumerates the twenty-eight conditions of pain mentioned by James Herrick that have been confused with coronary thrombosis. Dyspnea is often misinterpreted. The common breathlessness of neurocirculatory asthenia in a nervously tired person or in one who is "soft" and physically unfit has often been treated as cardiac dyspnea with restriction in exercise and with digitalis therapy when almost the opposite measures are indicated. Dyspnea of pulmonary origin is less commonly confused with cardiac dyspnea, but the error is made often enough to warrant much care in analysis. Chronic bronchitis with emphysema and weakness of the left ventricle with pulmonary vascular congestion and emphysema are the two conditions which in an elderly person, especially in the winter, are likely to be mistaken for each other. A chronic as well as an acute asthmatic state may be caused by congestion of the lungs secondary to heart disease. This is not widely appreciated. When there is marked mitral stenosis, the most common symptom is dyspnea on effort or in attacks (with or without asthma) or constantly. Such dyspnea is certainly to be ascribed to pulmonary vascular engorgement. But it is still the rule to attribute wrongly this dyspnea to heart, or rather myocardial, failure. To be sure, the dyspnea and pulmonary engorgement are due to the heart disease, but they are not due to myocardial failure. Palpitation is due to the consciousness of forceful, rapid or irregular heart action. It is never in itself a sign of heart disease and should never be prognosed and treated as such until the patient has been carefully studied. It may initiate a cardiac neurosis or even neurocirculatory asthenia unless properly handled at the outset. The most common condition associated with palpitation is neurocirculatory asthenia, of which it is frequently the chief symptom. It is quite a common error for an overactive heart to be misjudged in size. The forceful apex impulse produces a widespread movement of the anterior chest wall, which may be seen and felt several centimeters beyond the cardiac apex itself. If the outermost point of this impulse vibration is taken as the left edge of the heart, and especially if the measurement is made following the curve of the chest rather than tangentially from the midsternal line, a gross and misleading error results. It is a less common error to underestimate the size of the heart. On a few occasions it is possible to misjudge grossly the size of the heart on hasty examination when a fairly forceful impulse is felt near or in the midclavicular line in patients with mitral valve disease whose hearts are very large and whose powerful right ventricles may displace the anterior chest wall while the true apex impulse is in or near the left anterior axillary line. During a severe infection, especially rheumatic fever that attacks the myocardium, dilatation of the left ventricle may give rise to a mitral diastolic murmur (and in some cases even an accompanying thrill) which was thought pathognomonic of mitral stenosis, in the absence of free aortic regurgitation producing the so-called Austin Flint murmur. The author believes that the murmur is due to the relative mitral stenosis (dilated left ventricular cavity and undeformed mitral valve), whether

V 10
1936

there is any aortic regurgitation or not. Other diseases may cause temporary mitral diastolic murmurs as the result of left ventricular dilatation; this is especially the case in severe anemia due to any cause. When there is pulmonary vascular congestion in marked mitral stenosis, it is not primarily myocardial failure that is responsible but the mechanical influence of the valvular defect.

Electrocardiogram in Coronary Thrombosis.—Feldman examined 108 electrocardiograms of patients with coronary thrombosis, paying particular attention to the changes in the initial ventricular complexes. Eleven tracings showed no changes in either the initial or the final ventricular complexes. Forty-five cases showed changes in the final ventricular complex (ST and T waves) only. Fifty-one records showed conspicuous Q waves in association with characteristic changes in the ST segments and T waves. Nineteen of these, belonging to the Q_1 group and almost always associated with the final ventricular deflection of the T_1 type, often displayed a conspicuous Q wave in lead 1, while the other QRS deflections in this lead were small. Twenty tracings of the fifty-one were classified into the Q_3 group and were accompanied by the final ventricular deflection of the T_3 type. There were twelve curves showing Q_3T_3 only. In one case this was inconspicuous two days after the attack, only to become prominent three days later. Changes in the initial ventricular complex without accompanying changes in the final ventricular complex are rare in acute coronary thrombosis. Such a curve would speak, instead, for an old infarction. Most of the cases in which there were posterior infarctions showed tracings of the Q_3T_3 type, while the rest, either having multiple infarctions or a single posterior one, displayed curves that did not conform to either Q_1 or Q_3 groups. Other changes in the initial ventricular complex, such as marked reduction in amplitude or the development of intraventricular conduction disturbances, may occur in coronary thrombosis.

Annals of Otol., Rhinol. and Laryngology, St. Louis

45: 307-608 (June) 1936

Study in Transillumination. L. Richards, Boston.—p. 307.
Fundamentals of Allergic Rhinitis with Particular Reference to Ionization (Iontophoresis). L. W. Dean, St. Louis.—p. 326.
How Does the Organ of Corti Distinguish Pitch? M. H. Lurie, Boston.—p. 339.
Mechanics of Middle Ear Prosthesis. A. G. Pohlman, Omaha.—p. 351.
Some Sphenopalatine Syndromes: Review of Sluder's Observations on Sphenopalatine Ganglion. H. W. Lyman, St. Louis.—p. 362.
The Fifth, Ninth and Tenth Nerves in Bronchial Asthma. K. Phillips, Miami, Fla.—p. 373.
Autonomic Nervous System: Some Fundamentals for Otolaryngologists. D. R. Higbee, San Diego, Calif.—p. 385.
Pathways Involved in Pains of Nasal and Paranasal Origin Referred to Lower Cervical and Upper Thoracic Segments and Upper Extremity. A. Kuntz, St. Louis.—p. 394.
Ciliated Nasal Epithelium: Its Culture in Vitro: Preliminary Report. A. W. Proetz and Marian Pingsten, St. Louis.—p. 400.
Spontaneous (Nontraumatic) Atlanto-Axial Subluxation. I. Frank, Chicago.—p. 405.
Satisfactory Method for Irradiation of Malignant Disease of Esophagus. N. J. Birkbeck, J. O. Beavis and H. R. Huston, Dayton, Ohio.—p. 412.
Telangiectasia of the Nose: Treatment by Micro-Injection of Sclerosive Fluid. H. I. Biegeleisen, New York.—p. 416.
Treatment, Other Than Operative, of Nasal Accessory Sinuses. W. Mithoefer, Cincinnati.—p. 420.
Rhinoliths: Report of Three Cases; Review of Literature. J. Snyder and M. Feldman, Baltimore.—p. 430.
Plasma Cell Tumors of Nose and Nasopharynx. L. Blumenfeld, Brooklyn.—p. 436.
Pharyngeal Lymphatics as a Focus of Infection. L. E. Brown, Akron, Ohio.—p. 447.
Extensive Bilateral Subdural Abscess: Microscopic Study of Meninges and Brain: Report of Case. W. R. Geraghty, Baltimore.—p. 452.
Intravenous Anesthetic in Tonsillectomies. W. H. Turnley, Stamford, Conn.—p. 464.
The Physical Chemistry of Vasography. O. J. Dixon and E. R. Harrouff, Kansas City, Mo.—p. 467.
*Prevention of Postauricular Fistula by Periosteal and Subcutaneous Tissue Flaps. W. A. McNichols, Dixon, Ill.—p. 475.
Improved Technic for Submucous Turbinectomy. H. I. Harris, Los Angeles.—p. 481.
Treatment of Laryngeal Diphtheria: Statistical Study of 655 Cases. J. Eschenbrenner, Wichita Falls, Texas.—p. 485.

Prevention of Postauricular Fistula.—McNichols states that of sixteen radical mastoid operations done in the last ten years in private practice, thirteen patients have dry epithelized cavities, one died of meningitis after a primary skin graft and two were so unfortunate as to have moist ears with postauricular fistula. One of these was an old scarlet fever ear and the other patient had diabetes. Both refused further surgical treatment. The operations were done as near as possible after the teachings of Kerrison with the facial canal well lowered. A Siebenmann flap was done on the ear canal, which, according to Rae, is the best. Following a study of the literature, a flap was sought that would permit closure of postauricular wounds, provide wide opening for drainage through the external auditory canal and encourage growth of the epithelial covering. To cover and fill the mastoid cavity and tip, the adjacent periosteum, together with a fatty subcutaneous tissue, was chosen. A typical postauricular incision for the radical operation is made, and then at the upper tip of this incision a new incision is made at the right angles, upward and backward, for a distance of about 2 inches, dividing all tissues down to the bone. This flap is elevated, the anterior flaps are elevated and pushed forward, and the membranecartilaginous meatus is completely separated from the posterior wall of the bony meatus. After the mastoidectomy has been completed, the margins are beveled carefully. The skin of the anterior flap is now dissected from the subcutaneous tissue and periosteum. This dissection is carried down into the membranous canal. A thin bladed knife is now introduced into the membranocartilaginous canal and, hugging the floor, an incision is made outward until it bisects the incision from behind. The flap is used to form the roof, so there is no obstructing ledge below to interfere with free drainage. The periosteum and subcutaneous tissue are freed from the skin in the posterior flap. The under flap is freed from above downward to a distance of about 1½ inches behind the primary incision. This allows the graft to be moved forward and sutured by interrupted chromic sutures to the periosteal and fat graft from the anterior flap. Great care is taken to tie all bleeding vessels and to have the mastoid cavity free of blood and debris before the periosteal flaps are brought into place. The posterior auricular wound is then closed by vertical mattress silkworm-gut sutures. The membranocartilaginous flap is held in place by packs. The after-care is the same as for all mastoids.

Archives of Pathology, Chicago

21: 727-874 (June) 1936

Reaction to Presumptive Kahn Test in Patients with Bejel (Nonvenereal Syphilis). E. H. Hudson, Deir-ez-Zor, Syria.—p. 727.
*Lipid Composition of White Blood Cells in Leukemia. E. M. Boyd, Kingston, Ont.—p. 739.
Chemotropic Reactions of Polymorphonuclear Leukocytes to Various Micro-Organisms: Comparison. M. McCutcheon and H. M. Dixon, Philadelphia.—p. 749.
Teratoma: Explanation of Its Cause Based on Organizer Theory of Embryology. J. Krafka Jr., Augusta, Ga.—p. 756.
Embolic Pulmonary Lesions Produced in Rabbits by Human Fat Containing Fatty Acids or Soaps. E. F. Hirsch, Chicago.—p. 765.
Shwartzman Phenomenon in Kidneys of Rabbits: Observations on Effects of Intravenous Administration of Bacterial Filtrates. I. E. Gerber, New York.—p. 776.
*Acquired Resistance to Tuberculosis, with Investigations into Validity of Ranke's Classification. H. S. Reichle and Mae Gallavan, Cleveland.—p. 797.
Pathogenesis and Histopathology of Experimental Pneumonia in Rats F. D. Gunn and W. J. Nungester, Chicago.—p. 813.

Lipid Composition of Leukocytes in Leukemia.—Boyd determined the lipid composition of the white blood cells, by oxidative micromethods, for nine patients with chronic myelogenous leukemia, eight with chronic lymphatic leukemia, one with acute myeloid leukemia, two with Hodgkin's disease and thirty normal adults. He found that the phospholipid and free cholesterol in the blood leukocytes are decreased in chronic lymphatic leukemia and increased in chronic myelogenous leukemia, and, of the two, the most marked change occurs in the phospholipid fraction. As a result of these differences, total fatty acids and total lipid are lower in the lymphatic than in the myelogenous type. Owing to the difference in free cholesterol, the total cholesterol in the leukocytes is lower in chronic lymphatic leukemia than in chronic myelogenous leukemia. There are no consistent changes in the neutral fat or in the cholesterol esters, the latter being low in most blood leukocytes. The range of values for the total lipid in the leukocytes of

normal adults is sufficient to include all the values found in leukemia. In general, the values in chronic lymphatic leukemia fall in the lower part of the normal range, and the values in chronic myelogenous leukemia in the higher part. When this fact is compared with the previous observations that the lipid of the granulocytes tends to be higher than that of the lymphocytes, it appears that the differences in leukemia are due to differences in the relative percentages of lymphatic and myeloid types of cells in the buffy layer of blood, and not to a change in the metabolism of the blood leukocytes in leukemia.

Acquired Resistance to Tuberculosis.—Reichle and Gallavan observed eighty-one cases, eight cases of primary tuberculous infection and seventy-three cases of reinfection. The patient who has a primary tuberculous infection usually dies not because of a pulmonary or intestinal lesion but as a result of hematogenous dissemination from that point. The Negro patients in the authors' series were a factor definitely tending to decrease the number of cases of lymphatic and hematic blockade. Thus, although 73.1 per cent of the white patients belonged in the group in which a "lymphatic block was present," only 44.1 per cent of the Negroes were represented in this group. In the group in which a hematic block was present the Negroes were represented by 58.5 per cent and the white patients by 71.6 per cent. Almost half of the Negroes (47 per cent) had subacute pulmonary tuberculosis, whereas almost half of the white patients (43.9 per cent) had chronic fibrous pulmonary tuberculosis. The type of disease is of distinct importance in the determination of lymphatic and hematic blockade, for the incidence of efficient lymphatic blockade rises from 30 per cent in cases of subacute pulmonary tuberculosis to 90.9 per cent in cases of chronic fibrous tuberculosis, the incidence of efficient hematic blockade being 45 and 77.2 per cent, respectively. Reisner's observations that blockade against an extrapulmonary lesion is less efficient than that against a pulmonary lesion is perhaps suggestive that in 50 per cent of the cases of extrapulmonary lesions there was a break in the lymphatic blockade and in 75 per cent a break in the hematic blockade. That chronic tuberculous disease of the lungs is rarely associated with the same condition in any other organ, however, is shown by the fact that in only two cases was there associated pulmonary and extrapulmonary disease. These results must be interpreted as a manifestation of resistance.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

17: 321-384 (June) 1936

Development of Short Wave Therapy. E. Schliephake, Giessen, Germany.—p. 327.
Physical Properties of Bone. A. Steindler, Iowa City.—p. 336.
Tonsillextirpy. J. F. Jaros, Chicago.—p. 346.
Investigation of Electrostatic and Magnetic Field of Short and Ultrashort Waves (Radiothermy). D. H. Kling, Los Angeles.—p. 352.
New Electrode Technic for Therapeutic Ionization (Iontopheresis). S. Benson, Chicago.—p. 363.

Arkansas Medical Society Journal, Fort Smith

33: 35-48 (July) 1936

Low Back Pain. R. A. Milliken, Little Rock.—p. 35.
Blastomycosis of Larynx Complicating Carcinoma: Report of Case. T. E. Fuller, Texarkana.—p. 37.
Agenesia of Abdominal Muscles in New-Born Infant. D. Smith, Hope.—p. 39.

Canadian Public Health Journal, Toronto

27: 261-312 (June) 1936

The Problem of Heart Disease in Adults. J. A. Oille, Toronto.—p. 261.
Death in Safety Week. N. L. Burnette, Ottawa, Ont.—p. 267.
Partnership in Public Health Nursing. Alma C. Haupt, New York.—p. 272.
*Antitoxinogenic Value of Plain and Alum-Precipitated Toxoid. V. T. Schuhardt, Galveston, Texas, and E. B. M. Cook, Austin, Texas.—p. 278.
Overseas Immigration Medical Service. H. B. Jeffs, Ottawa, Ont.—p. 282.

Plain and Alum-Precipitated Toxoid.—Schuhardt and Cook compared the antitoxin response to one dose of alum-precipitated toxoid and two doses of plain toxoid in persons having less than 0.01 unit of original antitoxin. The alum-precipitated toxoid contained 15.5 Lf units (the volume of toxin flocculating with one unit of antitoxin) per cubic centimeter and was prepared from the same lot as the plain toxoid (17 Lf) used in the study. Antitoxin titrations of serum show that the response to two doses of plain toxoid is distinctly better than the response to one dose of the alum-precipitated toxoid. Of those receiving one dose of alum-precipitated toxoid only 44 per cent developed more than 0.01 unit, whereas 80 per cent of those receiving two doses of plain toxoid developed more than 0.01 unit of antitoxin. Only 11 per cent of those tested showed antitoxin increases at the ten to twelve week titration when compared with the four to five week titration, and 14 per cent of a control group showed antitoxin increases in from one to four months with no artificial antigenic stimulus other than the Schick test. For the comparison of the antitoxinogenic value of diphtheria antigens it would seem advisable to establish as short a period as possible to measure the antitoxin response and to include a control group, particularly if the test group resides in an institution with a possible diphtherial environment.

Colorado Medicine, Denver

33: 449-520 (July) 1936

The General Practitioner and Allergy. T. D. Cunningham and J. C. Mendenhall, Denver.—p. 462.
Postoperative Treatment Based on Physiologic Principles. J. R. Plank, Denver.—p. 465.
Some Otolaryngologic Problems Encountered in Daily Practice. H. L. Hickey, Denver.—p. 469.
Evipal Anesthesia for Minor Surgical Procedures. C. L. Wilmoth, Denver.—p. 473.
Colloid Cyst of the Third Ventricle. J. R. Jaeger, Denver.—p. 475.

Delaware State Medical Journal, Wilmington

8: 93-142 (June) 1936

*Psychiatric Implications of Endocrine Disturbances. M. A. Tarumianz, Farnhurst.—p. 93.
Habit Formation: Case. P. F. Elfeld, Farnhurst.—p. 98.
Manic-Depressive Psychosis: Cases of Depression. J. W. Ballard, Farnhurst.—p. 101.
Personal Inadequacy Resembling Dementia Praecox: Case Report. C. Uhler, Farnhurst.—p. 105.
Difficulties in Differential Diagnosis of Manic-Depressive Psychosis and Schizophrenia. B. G. Lawrence, Farnhurst.—p. 108.
Psychiatric Uses of Intravenous Sodium Amytal. J. K. Morrow, Farnhurst.—p. 110.
Multiple Neuritis with Pseudo-Athetosis and Short Confused Period in Syphilitic Treated with Neoarsphenamine. G. J. Gordon, Farnhurst.—p. 114.
Some Problems in Physical Diagnosis in Mental Cases. Joan F. McGreevy, Farnhurst.—p. 120.

Psychiatric Implications of Endocrine Disturbances.—Tarumianz believes that approximately 5 per cent of all mental deficiency is caused by glandular irregularities either of the inherent type or due to some infection received in intra-uterine life. Glandular treatment of the mother, particularly in the thyroid cases in which there is a hypofunctioning, will often prevent the condition from arising in the child. Early thyroid treatment will result in at least a near normal individual, but the treatment must be instituted at least before the second year of life. All deviations from the normal produce mental traumas that result in maladjusted individuals, if not properly treated. This is particularly true in the sexual field, as propagation being one of the strongest instincts in human life, inability to carry on the function results in a marked feeling of inferiority with a compensatory reaction, resulting in all types of abnormal behavior. If abnormal individuals find it impossible to obtain equality through social methods, antisocial methods will be used. The boy who is different from the crowd because of some glandular bodily deformity broods, draws back and finally seeks relief from his pent up emotions by seeking attention from the crowd. Physical deformity in adolescence is well recognized as one of the important etiologic factors of juvenile delinquency. Antisocial habits are thus formed which continue into adult life. Hypersecretion of certain glands causes a physical and mental unrest, forcing the individual to seek new activity and excitement. He may resort to drugs and alcohol as a relief from the abnormal drive. Should the individual not receive relief through antisocial acts, he becomes introspective and possibly introverted. Neuroses and psychoses develop readily. They seek compensation and excuses for their own inadequacy. Psychiatrists have been inclined to scout the theory that there is such a thing as functional insanity. Some feel that all these conditions are due to glandular disturbances. The delicate, yet at present vaguely understood, relation between the emotions,

the sympathetic nervous system and the glands of internal secretion make it extremely difficult to arrive at any definite conclusion. Since glandular conditions are often amenable to treatment before the period of puberty, it is essential that the diagnosis be made early and treatment instituted. Examination for abnormalities of the glandular system should be carried on on all children, even as their eyes and throats are examined for pathologic manifestations.

Georgia Medical Association Journal, Atlanta

25: 185-226 (June) 1936

The Fifth Lumbar Vertebra as Cause of Low Back Pain. T. P. Goodwyn and H. W. Jernigan, Atlanta.—p. 185.
Dilution and Concentration Tests of Kidney Function. W. E. Storey, Columbus.—p. 188.
Fusospirochetal Diseases of Lung. J. P. Tye, Albany.—p. 192.
Use of Merthiolate Intravenously in Typhoid Fever: Report of Nineteen Cases. L. H. Goldsmith, Atlanta.—p. 197.
Myosarcoma of Round Ligament: Report of Case. J. D. Martin Jr. and F. F. Rudder, Atlanta.—p. 202.
Influence of Pregnancy on Tuberculosis. W. W. Daniel, Atlanta.—p. 203.
New Treatment for Septicemia. W. S. Dorough, Atlanta.—p. 204.

Journal of Bacteriology, Baltimore

31: 575-668 (June) 1936

Use of Semisolid Agar for Detection of Bacterial Motility. R. P. Tittsler and L. A. Sandholzer, Rochester, N. Y.—p. 575.
*Preparation of Nontoxic Shiga Dysentery Vaccines by Irradiation with Soft X-Rays: Preliminary Note. Helen Norris Moore and H. Kersten, Cincinnati.—p. 581.
Interesting New Species of Luminous Bacteria. F. H. Johnson, Princeton, N. J., and I. V. Shunk, Raleigh, N. C.—p. 585.
Aerobic Dissimilation of Lactic Acid by Propionic Acid Bacteria. C. Erb, H. G. Wood and C. H. Werkman, Ames, Iowa.—p. 595.
Diversion of Normal Heterolactic Dissimilation by Addition of Hydrogen Acceptors. M. E. Nelson and C. H. Werkman, Ames, Iowa.—p. 603.
Studies on Hemolytic Streptococci: II. Streptococcus Pyogenes. Alice C. Evans, Washington, D. C.—p. 611.
Utilization of Lactose by Escherichia Coli-Mutabile. C. J. Deere, Anna Dean Dulaney and I. D. Michelson, Memphis, Tenn.—p. 625.

Preparation of Shiga Dysentery Vaccines by Irradiation.—Moore and Kersten investigated the possibility that the changes accompanying the killing of bacteria with heat are not identical with those produced with x-ray killing and that a vaccine prepared by irradiation of organisms with soft x-rays might be less toxic than one prepared by killing with heat, yet retain all its antigenic properties. The bacteria were prepared for irradiation by wiping off eighteen-hour slant cultures of Shigella dysenteriae (Shiga) and bringing the resulting suspensions in salt solution to a turbidity of 500 on the Fuller scale. In order that the suspension during irradiation might occupy a small enough space to be placed in the most intense part of the x-ray beam near the focal spot of the tube, it was concentrated by centrifugating for ninety minutes at 4,000 revolutions per minute, the supernatant liquid being decanted and resuspended in 1 cc. of sterile sodium chloride solution. These concentrated suspensions were irradiated in small glass dishes placed at a distance of 5 cm. from the focal spot of a copper target gas x-ray tube (Kersten, 1934) whose radiation had the $K\alpha$ (1.54 angstroms) and the $K\beta$ (1.38 angstroms) lines of copper as its most intense parts. The tube was operated at 38 peak kilovolts, with a current of 20 milliamperes, and the time of irradiation varied from thirty to 300 minutes. After irradiation the suspensions were made up to 10 cc. with sterile sodium chloride solution and tested for sterility before use. As a test for the antigenic power of the x-ray vaccines, rabbits were given 0.4 cc. of living organisms intravenously. Control animals were given equal doses to determine whether the toxicity of these amounts was sufficient to kill. Of thirty animals receiving from 1 to 4 cc. (1 cc. doses) of vaccine irradiated from thirty to 100 minutes, seventeen died after receiving from one to three inoculations and thirteen survived the test dose of living organisms. Of fifteen animals receiving from 1 to 4 cc. (1 cc. doses) of vaccine irradiated for from 120 to 300 minutes, two died as a result of intercurrent infections and the remaining thirteen survived the test dose for immunity. All control animals receiving heat-killed or living organisms died within from twenty-four to thirty-six hours after inoculation. It appears that vaccines receiving large doses of x-rays are rendered nontoxic and retain their antigenic properties, while vaccines receiving small doses of x-rays, even though these doses are more than sufficient merely to kill the organism, produce vaccines that are still toxic.

Journal of Comparative Neurology, Philadelphia

64: 1-184 (June 15) 1936

Experimental Study of Thalamocortical Projection of the Macaque Monkey. A. E. Walker, Chicago.—p. 1.
Evolution of Medial Geniculate Body. J. W. Papez, Ithaca, N. Y.—p. 41.
Experimental Analysis of Pelvic Autonomic Ganglions in Cat. A. Kuntz and R. L. Moseley, St. Louis.—p. 63.
Studies of Living Nerves: V. Alcoholic Neuritis and Recovery. C. C. Speidel, Charlottesville, Va.—p. 77.
Experimental Studies on Afferent Innervation of Cat's Heart. W. A. Nettleship, Baltimore.—p. 115.
Correlated Anatomic and Physiologic Studies of Growth of Nervous System of Amphibia: XII. Quantitative Relations of Spinal Cord and Ganglions Correlated with Development of Reflexes of Leg in Amblystoma Punctatum Cope. G. E. Coghill, Philadelphia.—p. 135.
Innervation of Teeth: Analysis of Nerve Fiber Components of Pulp and Peridental Tissues and Their Probable Significance. A. D. Brashear, Rochester, N. Y.—p. 169.

New England Journal of Medicine, Boston

214: 1229-1274 (June 18) 1936

Trichinosis, with Especial Reference to Changed Conceptions of Pathology and Their Bearing on Symptomatology. G. Blumer, New Haven, Conn.—p. 1229.
*Syndrome of Alkalosis Complicating Treatment of Peptic Ulcer: Report of Cases with Review of Pathogenesis, Clinical Aspects and Treatment. H. Jeghers and H. H. Lerner, Boston.—p. 1236.
Unusual Case of Nevus Vasculosus. F. H. Baehr, Springfield, Mass.—p. 1244.
Progress in Anesthesia in 1935. R. F. Sheldon, Boston.—p. 1246.

Alkalosis Complicating Treatment of Peptic Ulcer.—Jeghers and Lerner cite three cases of peptic ulcer in which treatment by the usual alkaline and Sippy regimen resulted in the development of hypochloremia and alkalosis. This syndrome is known to follow persistent pyloric obstruction. It is not so well appreciated that it may also develop without organic obstruction if alkaline powders are given in the presence of impaired ability of the body to utilize basic ions. Persistent vomiting, renal disease, anemia, hematemesis, low salt intake, excessive perspiration, liver disease and excessive doses of alkalis can all impair the acid-base regulating mechanism. Persons with impaired renal function are invariably sensitive to small doses of alkalis. It seems probable that alkalosis can develop in persons with normal renal function only if one or more additional factors besides excessive intake of alkalis are present. Persistent alkalosis can impair renal function by causing calcification or tubular nephritis. Nitrogen retention invariably accompanies alkalosis and hypochloremia. A characteristic clinical as well as laboratory picture develops which makes the diagnosis relatively easy. At first the symptoms may be vague, such as mild gastric disturbances followed by a distaste for milk, nausea and vomiting, associated with abdominal pain. The individual often shows peculiar mental deviations. Soon after, severe headache, quite frequently in the occipital region, or manifest as a sense of pressure on top of the head, may develop. Dizziness or a sensation of lightheadedness, marked on motion of the head, commonly appears. Aching or cramplike pains in the muscles or joints are characteristic. Tingling sensations in the extremities may appear. Spasms and later definite spontaneous tetany may develop. The more severe cases often show slight fever, rapid pulse, slow respirations, flushed face with injection of the conjunctivae and dehydrated skin. Reflexes are usually hyperactive, and sensory hyperesthesia may develop. At times, rather than spastic phenomena the patient may show weakness, followed by prostration and drowsiness. Death follows eventually if treatment is not instituted. At the onset the urine is alkaline, increased in amount (occasionally up to 2,000 or 3,000 cc.), with low fixed specific gravity and often containing traces of albumin. Later the urinary output diminishes. The phenolsulfonphthalein test reveals a depression to as low as 10 per cent or less excretion in two hours. The blood chlorides may drop from 500 mg. to a level of 350 mg. per hundred cubic

centimeters. Enough sodium chloride should be given to keep the chlorides at a high level. The blood nonprotein nitrogen rises characteristically and often reaches values of 100 mg. or more. A valuable test in the diagnosis of alkalosis is the estimation of the alkali reserve of the blood, which usually shows a marked rise, especially in the more severe cases. Sodium chloride therapy is highly successful.

New Jersey Medical Society Journal, Trenton

33: 327-384 (June) 1936

Address of the President: Prophecy of Medical Practice in the Future. M. W. Newcomb, Brown's Mills.—p. 333.
*Polyglandular Disease. G. Crile, Cleveland.—p. 336.
The Medical Examination of Industrial Workers. E. E. Evans, Pennsgrove.—p. 341.
Goiter Surgery. C. G. Heyd, New York.—p. 345.
John Bull, M.D.: Personal Observations in England During March 1936. H. S. Read, Atlantic City.—p. 352.
Three Decades of Honorable Service. N. B. Van Etten, New York.—p. 358.

Polyglandular Disease.—Crile points out that there is no organ that stands by itself and functions as if it had rented space in the human body and ran a show to suit itself. Every organ is tied up with other organs, and the organism as a whole functions by virtue of the various parts played by this or that organ. All the organs are coordinated by the only tissue of the body that can be conditioned—the nerve tissue. Therefore it is impossible to think of nerve tissue, whether it be brain, spinal cord, a nerve fiber, the sympathetic chain or the sympathetic complex, as performing a function by itself alone. In attacking the various diseases peculiar to civilized man in particular, one should attack them by attacking a neuroglandular group rather than by an attack on a single organ. Exophthalmic goiter is a good example of a neuroglandular disease. In twenty-three cases of primary exophthalmic goiter the author did a primary denervation of the adrenal and the entire disease disappeared, including the hyperplasia, sweating and emotionalism. Neurocirculatory asthenia closely resembles hyperthyroidism. It presents a pure example of a pathologic physiology in the adrenal-sympathetic system. Therefore it should be cured by denervation of this system.

New Orleans Medical and Surgical Journal

88: 733-790 (June) 1936

The Doctor and the Public. C. P. Gray, Monroe, La.—p. 733.
Stanford Emerson Chaille: Dean, Teacher and Friend. J. A. Danna, New Orleans.—p. 737.
*Autogenous Vaccine Therapy in Pediatrics. C. J. Bloom, New Orleans.—p. 738.
Use of Abduction Splints in Fractures of Humerus. J. W. Faulk, Crowley, La.—p. 746.
Tonsillectomy by Diathermy (Electrocoagulation). M. P. Boehinger, New Orleans.—p. 750.
Advantages of Repairing Old Birth Canal Injuries at Time of Delivery. T. B. Sellers and J. T. Sanders, New Orleans.—p. 755.
Leiomyoma of Prostate: Report of Case. J. G. Pratt, New Orleans.—p. 763.
Caisson Disease (Compressed Air Disease: Diver's Paralysis). L. J. Bienvenu, Opelousas, La.—p. 767.

Autogenous Vaccine Therapy in Pediatrics.—Bloom used autogenous vaccines in forty-six cases of common cold, thirty-five of asthma, thirty-three of pyelitis and eleven of furunculosis. Cold vaccines gave either good or fair results in only 28.4 per cent of the cases. Immediate protection is the exception to the rule. Small initial with increasing doses, not exceeding 1 cc. at frequent intervals and over a long period, are advocated. The seasonal change of the flora of the upper respiratory tract justifies additional observations as to what organisms shall be included and the further consideration of a perennial vaccine. In selected cases, vaccines in bronchial asthma gave 25.7 per cent cures and noticeable improvement in 40 per cent. The bacterial focus or foci of infection must be sought; the method of culturing should follow a definite routine in every case. Deductions warrant continued use of vaccines in the treatment of bronchial asthma of bacterial origin. The result of vaccine therapy in the cases of resistant pyelitis in which other treatments except cystoscopy have been used with negative results gave a 45.5 per cent cure. Vaccines appear especially effective when more than one organism has been removed. The treatment of pyelitis by vaccine should be encouraged and continued. There was a 100 per cent cure in the eleven cases of furunculosis.

Philippine Islands Med. Association Journal, Manila

16: 203-264 (April) 1936

Maternal Mortality of Manila. Honoria Acosta Sison, Manila.—p. 203.
Present Concept of Therapeusis of Malaria. A. Ejercito, Manila.—p. 207.
Nephroptosis Among Filipinos. J. Eduque, A. T. Zavalla and B. R. Diño, Manila.—p. 221.
Blindness Among Filipinos. A. R. Ubaldo and C. D. Ayuyao, Manila.—p. 223.
Identity and Incidence of Flagellated Protozoan Parasite Found in Human Urine. Ana Vazquez-Colet and M. Tubangui, Manila.—p. 231.
The Problem of Cross Connection: Appeal to the Medical Profession. M. Mañosa, Manila.—p. 235.
Treatment of Marked Retroversion of Uterus by Alfieri's Method. F. Calderon, Manila.—p. 243.

16: 265-328 (May) 1936

Scientific Study of Population Problems. S. de los Angeles, Manila.—p. 265.
The Test of Labor. B. Roxas and A. Baens, Manila.—p. 271.
*Fatal Case of Paralytic Ileus Associated with Severe Strongyloides Infestation Suggesting Internal Autoinfection. J. O. Nolasco, Culion, and C. M. Africa, Manila.—p. 275.
Apparatus for Extraction of Obstetric Forceps. M. Ortiz.—p. 285.
Pathogenesis of Exophthalmic Goiter (Parry's Disease, Graves' Disease, Basedow's Disease). M. M. Gallardo, Dumaguete.—p. 291.

Ileus Associated with Strongyloides Infestation.—Nolasco and Africa report a fatal case of intestinal obstruction due to paralytic ileus associated with a severe infestation with Strongyloides stercoralis. The discovery of filariform larvae in the muscular and serous coats of the jejunum, ileum, appendix, large intestine and liver tends to confirm the theory advanced by Gage, Ophüls and Nishigori that reinfection in strongyloidosis can take place in the intestine. Traumatism was evident and was shown by marked congestion and swelling of the mucosa of the small intestine and the formation of small submucous abscesses in the large intestine. The vomiting and abdominal distention and tenderness with tympanism before death and the postmortem observations of intestinal obstruction without any apparent gross organic cause can be explained only by a massive invasion of the intestinal wall. The weak condition of the patient and the stasis of the intestinal contents possibly induced a larger number of the infective forms to penetrate the intestinal wall. That there was an overwhelmingly extensive infestation was also shown by the abundant larvae found in the feces at necropsy. That the presence of the larvae in the deeper layers of the intestinal wall and liver was not due to postmortem migration is indicated by the presence of inflammatory changes, such as tubercle formation around the larvae. In spite of the usual absence of alarming symptoms, strongyloidosis must be regarded as a serious disease. The patient's infestations had been observed since admission to this colony in June 1930. His death could not be attributed to any cause other than the heavy infestation with Strongyloides.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

44: 313-386 (June) 1936

Surgical Treatment of Facial Paralysis. L. Davis and D. Cleveland, Chicago.—p. 313.
Maternal Mortality Study in Seven Cities of the Pacific Coast—1933 and 1934. T. F. Bell, Oakland, Calif.—p. 318.
Abortion Deaths. R. E. Watkins, Portland, Ore.—p. 338.
Ectopic Gestation. R. O'Shea, Seattle.—p. 342.
Toxemia Group. C. W. Page, Berkeley, Calif.—p. 343.
Puerperal Hemorrhage. C. W. Page, Berkeley, Calif.—p. 346.
Induction of Labor. C. W. Page, Berkeley, Calif.—p. 348.
Septicemia. H. A. Stephenson, San Francisco.—p. 349.
Study of Maternal Mortality in San Francisco, Oakland and Berkeley, 1932, 1933 and 1934. T. F. Bell, Oakland, Calif.; assisted by D. A. Dallas and A. M. Vollmer, San Francisco, and C. W. Page, Berkeley, Calif.—p. 355.
Lingual Thyroid: Comprehensive Review: Division VII. M. L. Montgomery, San Francisco.—p. 373.

Wisconsin Medical Journal, Madison

35: 413-500 (June) 1936

Postoperative Neurologic Complications. H. W. Woltman, Rochester, Minn.—p. 427.
Spinal Cord Injuries. E. M. Hammes, St. Paul.—p. 436.
Fever Therapy in Tabes Dorsalis, Multiple Sclerosis and Dementia Paralytica. E. D. Schwade, Milwaukee.—p. 446.
Tularemia: Etiology, Diagnosis and Treatment. S. B. Pessin, Madison.—p. 448.

V 107
1936

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 1091-1142 (May 30) 1936

Birth Control: Contraception and the So-Called Safe Period. J. Young.—p. 1091.
Treatment of Myasthenia Gravis. L. Minski and A. B. Stokes.—p. 1095.
Id. H. J. Wade.—p. 1099.
Treatment of Amblyopic Eye. W. H. Summerskill.—p. 1101.
Treatment of Fusospirillary Infection of Gums. C. B. Henry.—p. 1104.

Indian Medical Gazette, Calcutta

71: 181-244 (April) 1936

"Man-Made" Malaria in India. J. A. Sinton.—p. 181.
*Treatment of Neurosyphilis with Monkey Malaria: Preliminary Note. R. N. Chopra and B. M. Das Gupta.—p. 187.
Bacteriologic Studies in Epidemic Dropsy. C. L. Pasricha, A. J. H. deMonte, K. Banerjee and S. Lal.—p. 189.
New Type of Choleraphage—Type M. C. L. Pasricha, A. J. H. deMonte and S. K. Gupta.—p. 194.
Description of Bacterium Pseudo-Carolinus. C. L. Pasricha and G. Panja.—p. 196.
Pitfalls in Ophthalmic Practice. C. R. Chakraverti.—p. 199.
A-O Tuberculin in Ophthalmology. B. P. Banaji—p. 203.
Response to Pilocarpine in Cases of Asthma. Dharmendra.—p. 204.
So-Called Mystery Disease of Calcutta (Jhin-Jhinia or Thar-Tharia). R. N. Chopra and R. N. Chaudhuri.—p. 205.
Technic for Putting Up Fracture of Clavicle. R. L. Raymond.—p. 209.
Natural Spirillum Minus Infection in White Mice. R. Knowles, B. M. Das Gupta and S. Sen.—p. 210.

Treatment of Neurosyphilis with Monkey Malaria.—Not having a suitable case of tertian malaria available at the time, Chopra and Das Gupta treated two patients suffering from optic atrophy, with a history of syphilis and a moderately positive Wassermann reaction, with monkey plasmodium. The first patient showed a marked refractoriness to infection with Plasmodium Knowlesi. After the initial inoculation there was a long incubation period, the temperature was never high and the infection died out spontaneously within a week. A second injection of 0.8 cc. of blood was tried without infection resulting, whereas the same dose from the same animal given to the other patient at the same time produced alarming symptoms. The complete failure of the second injection may be ascribed to a degree of tolerance being acquired by the patient from the previous infection. In the second case there was a high temperature with a low parasite count similar to that seen in quartan infection, and marked cerebral symptoms developed which were easily controlled with small doses of atabrine and quinine. There is no doubt that the reaction of the pupils to light is more brisk and the mental condition of the patient has greatly improved. He is no longer apathetic and is now demanding to go to his home. His speech, though still blurred, is clearer than before. An ophthalmic examination showed that so far as the fields of vision and the appearance of the retina are concerned there is no change. The patient is being kept under observation. It appears that an attack of monkey malaria in human subjects confers immunity or a marked degree of tolerance to reinfection. How long this tolerance is maintained is now being studied.

Irish Journal of Medical Science, Dublin

No. **124:** 145-192 (April) 1936

The Growth of Populations. F. Kane.—p. 145.
Juvenile Rheumatism and Prevention of Heart Disease. C. J. McSweeney.—p. 158.
*Observations on Treatment of Tetanus. E. T. Freeman.—p. 166.
Assistant Diagnosticians. J. T. Wigham.—p. 171.
The Bundle-Branch Block Controversy: Survey of Literature. P. T. O'Farrell.—p. 175.

No. **125:** 193-240 (May) 1936

Neonatal Mortality in Dublin. W. R. F. Collis.—p. 193.
Mediastinal Gland Tuberculosis in Young Children. Dorothy Price.—p. 200.
Calcium Metabolism in Relation to Disease. Ella G. A. Webb.—p. 209.
Some Features of Calcium Metabolism. W. Sheldon.—p. 220.

Observations on Treatment of Tetanus.—Freeman cites five cases of tetanus, four with short incubation periods and one of intermediate length, in four of which recovery occurred and one of which was fatal. The death was due to circulatory failure but was directly attributable to bronchopneumonia. Serum was given freely intravenously and intramuscularly. The dosage was from 160,000 to 200,000 units in each case. Chloral hydrate was used partly in one case. Phenobarbital, especially phenobarbital sodium, was employed in all the cases with excellent results. In the third case tribrom-ethanol was tried, with remarkable sedative effect. In the fourth and most convulsive case tribrom-ethanol was employed night and morning for thirteen days, producing almost continuous anesthesia. The dose given was midway between the total anesthetic dose and the obstetric dose for the patient's weight. This patient received in all 99.7 cc. of the drug. The result was excellent. In the fifth case it was employed by night for twelve nights. Feeding was chiefly by dextrose solutions of various kinds. With patience, especially when half awake, the patients could be induced to swallow slowly. The conclusions reached are that phenobarbital is of great value and much superior in tetanus to the older hypnotics, and that tribrom-ethanol appears to be a drug of inestimable value. It stops the spasm, greatly relaxes the rigidity, and substitutes sleep and rest for the most intense agony of body and anxiety of mind.

Medical Journal of Australia, Sydney

1: 665-696 (May 16) 1936

Approach to Interpretation and to Treatment of Psychoneuroses and Psychoses. C. I. McLaren.—p. 665.
Some Aspects of Thoracic Surgery. P. S. Messent.—p. 670.
A. J. Thomas's Modification of the Thomas Knee Splint. J. C. Storey and A. J. Thomas.—p. 675.

Practitioner, London

136: 669-796 (June) 1936

Treatment of Patients with Abnormal Blood Pressure. J. Hay.—p. 669.
Arteriosclerosis: General Considerations. G. Evans.—p. 679.
*Abdominal Manifestations of Arterial Disease. C. E. Lakin.—p. 693.
Cerebral Manifestations of Arterial Disease. D. McAlpine.—p. 705.
Surgical Aspects of Arterial Disease. W. H. C. Romanis.—p. 717.
Estimation of Blood Pressure and Its Relation to Life Assurance. R. Hilton.—p. 729.
Investigation of Diseases of Salivary Glands. R. T. Payne.—p. 735.
Interlobar Empyema. W. Broadbent.—p. 747.
Spinal Anesthesia in Peptic Perforations. J. W. Riddoch.—p. 750.
Physical Effects of Conception Control. F. J. McCann.—p. 752.
Contraception in General Practice. E. F. Griffith.—p. 767.
Favorite Prescriptions: No. XVIII. Pharmacopeia of Brompton Hospital for Consumption and Diseases of Chest. W. E. Lloyd.—p. 777.

Abdominal Manifestations of Arterial Disease.—Lakin asserts that in considering the abdominal manifestations of arterial disease it is essential to distinguish between the effects of disease of the abdominal aorta and its branches, and a group of symptoms encountered in certain cases of disease of the coronary arteries of the heart. In recognizing cases of coronary occlusion in which pain is experienced within the abdomen rather than within the chest, the importance of an exact history both of the present and of any previous attack cannot be stressed too highly. It is exceptional for the pain to be entirely abdominal, and the sufferer in addition to his complaint of epigastric pain will often state that he also feels pain behind his breast bone. It may be possible to obtain a past history of retrosternal pain coming on after walking a distance and causing so much distress that the sufferer has to stand still till relief is obtained. In an attack the presence of dyspnea accompanying the abdominal pain would point strongly to a cardiac rather than to an abdominal cause. Examination of the heart may show characteristic abnormalities: thus signs of enlargement may be present, the first sound of the heart may be deficient in muscular tone, or possibly a pericardial rub is audible. A sphygmomanometric reading reveals an abnormally low blood pressure, and specific electrocardiographic observations, such as inverted T waves, a Pardee's curve or intraventricular or auriculoventricular block, may confirm the diagnosis. Within twenty-four hours of the onset, pyrexia and leukocytosis are usually to be found. Acute coronary occlusion with cardiac infarction when giving rise to abdominal pain may be confused with acute abdominal conditions, such as perforated peptic ulcer, biliary colic or acute pancreatitis; yet an exact history and careful clinical examination usually suffice to make the distinction fairly certain. Pain and vomiting may be encountered in either, but complete absence of rigidity in the abdominal muscles would be strongly in favor

of a cardiac origin of the pain. There are cases in which angina and cholecystitis coexist and in which surgical treatment of the diseased gallbladder has led to some alleviation of the anginal attacks. In the group of cases in which cholelithiasis gives rise to symptoms resembling abdominal angina the existence of dyspnea would strongly favor a coronary origin for the pain, whereas rigidity of the right rectus abdominis would inculpate the gallbladder. A careful examination of the heart should be carried out in all such cases and a cholecystogram may be of service.

Bull. et Mém de la Soc. Méd. des Hôpitaux de Paris

52: 873-934 (June 8) 1936

*Septicemia with Streptococcus Viridans. R. A. Marquézy and Mlle. S. Huguet.—p. 874.
Clinical and Histopathologic Study of Nanism in Course of Chronic Nephropathy: Case. E. Lesné, C. Oberling and C. Launay.—p. 881.
Botulism Following Ingestion of Spinach: Antitoxin and Toxoid Treatment with Recovery; Two Cases. Gilbert-Dreyfus, A. Ravina, J. Weill, E. Orinstein and Wimphen.—p. 891
Blood Protein Dysequilibrium in Course of Anaphylactoid States: Treatment with Intradermal Autoglobulin Therapy. G. Aubry, Thiodet and Ribère.—p. 896.
Rheumatismal Colitis: Case. R.-A. Gutmann and Robert-Wallich. —p. 898.
Splenic Infantilism of Cooley Type. M. Sendrail, A. Lyon and J. Lasserre.—p. 902.
*Diabetes of Mature Age or, Better, Dysglycemias of Old Age. M. Renaud and Petit-Maire.—p. 905.

Septicemia with Streptococcus Viridans.—Marquézy and Huguet describe a clinical syndrome caused by Streptococcus viridans and characterized by a septicemia with streptococci without involvement of the heart and carrying usually a favorable prognosis. These septicemias should be differentiated from those caused by hemolytic streptococci, clinically as well as bacteriologically. A case was reported of a woman, aged 30, in whom the disease was characterized clinically by two periods: The first, from the first to the ninth days, was characterized by sudden onset, even temperature, herpes and no other objective signs. The second, from the ninth to the twentieth days, was characterized by oscillating temperature, splenomegaly, a splenopneumonic syndrome and for one week purulent expectoration. Streptococcus viridans was found in the blood on the ninth day of the disease, but search for the port of entry for the streptococcus was not satisfactory, although it was most probably the tonsils. The prognosis of streptococcic infections of this nature is usually good and the course follows neither that of a bacterial endocarditis nor that of a hemolytic streptococcic infection.

Dysglycemias of Old Age.—According to Renaud and Petit-Maire, diabetic conditions are encountered frequently in old age and form a perfectly homogeneous group in which clinical and etiologic individualization offer a benign prognosis. Several case reports indicate that most of the patients of this age group who develop glycosuria fall in the class of those having a syndrome rather than a disease, which the authors prefer to call dysglycemia. These patients display common characteristics from the standpoint of appearance, discovery only during a routine examination, association with vascular, renal and nervous degenerations, and benign evolution and prognosis. Treatment should be directed toward correcting the functional disorders or at least lessening their frequency and toward regulating the manner of life of the individual, especially his activity and nutritive regimen.

Revue Méd.-Chir. des Maladies du Foie, Paris

11: 177-256 (May-June) 1936

Bengal Rose Test and Blood Hemolysis. M. Naville.—p. 177.
*Value of Bilirubin Test for Diagnosis of Hemorrhagic Diseases of Nervous System. G. Boudin and E. Panayotopoulos.—p. 204.
Investigations on Endocrine Function in Diabetes Mellitus. L. Cornil, U. Antonietti and J. Paillas.—p. 210.
Use of Olive Oil Duodenally in Vesicular Disorders. L. Isemein and J.-J. Blanc.—p. 219.
Amebic Abscess of Liver in Tropical Countries: Emetine Treatment. C. Massias.—p. 229.

Bilirubin Test in Diagnosis of Hemorrhagic Diseases.—Boudin and Panayotopoulos performed the classic direct van den Bergh reaction on the serum of a number of patients with hemorrhagic diseases of the nervous system to determine the importance of bilirubin in differentiating between cerebral hemorrhage and cerebral softening. The results of these tests on thirteen patients were inconstant. In any case, the test seemed to have no special value in the differential diagnosis between hemorrhage and cerebral softening. In spite of this negative conclusion it was possible to say that, if the bilirubin test was strongly positive, hemorrhage was likely.

Schweizerische medizinische Wochenschrift, Basel

66: 609-632 (June 27) 1936

*Significance of Bronchoscopy and Bronchoscopic Therapy for Diagnosis and Treatment of Bronchial and Pulmonary Diseases. A. Soulas. —p. 609.
Researches on Pathogenic Action of BCG. B. Galli-Valerio and M. Bornand.—p. 612.
*Chloride Content of Cerebrospinal Fluid and Blood in Course of Tuberculous Meningitis. E. Martin, R. S. Mach and R. Junet.—p. 616.
Anatomy, Histology and Physiology of Intrathoracic Organs from Point of View of Division of Adhesions. O. M. Mistal.—p. 619.
Use of Antipyretics in Treatment of Pulmonary Tuberculosis. F. Grandjean.—p. 621.
Modification of Deviation of Complement by Admixture of Blood. M. Goldstein.—p. 624.

Bronchoscopy in Diagnosis and Treatment.—Soulas shows that, owing to improved technic and instrumentarium, the indications for bronchoscopy have been greatly increased. Every sign of bronchial obstruction makes bronchoscopy advisable. He thinks that, whenever there is coughing, dyspnea, asthma-like wheezing and contraction of the ribs, bronchoscopy should be resorted to, for in such cases a foreign body may be detected and diagnostic errors avoided. He cites a number of cases in which foreign bodies were overlooked and the patients were treated for a long time on the basis of an erroneous diagnosis. He shows that bronchoscopy cannot be dispensed with in pulmonary atelectasis. He differentiates between true, acute atelectasis and secondary atypical atelectasis. He says that bronchoscopy has therapeutic value only if it reveals a growth or an obstruction, or if a complicating suppuration has developed that has to be drained. Its diagnostic significance is of much greater importance, particularly in cases in which the advisability of a thoracoplastic intervention or of a lobectomy has to be decided. The author discusses thoracoscopotherapy in pulmonary abscesses and in bronchial dilatations. Twelve cases of acute putrid pulmonary abscesses were treated with this method. The abscesses had existed for from four to eight weeks and the treatment required from six to twelve weeks. The number of bronchoscopic sessions varied between four and eight. The author says that bronchoscopotherapy as a rule effects cure in from 70 to 75 per cent of the acute pulmonary abscesses. However, even if bronchoscopy does not effect cure, it is a necessary preparatory measure for a surgical intervention. This applies particularly to the chronic abscesses, in which cure is much more difficult than in acute abscesses. In bronchial dilatations, the therapeutic results of bronchoscopy vary considerably. Some bronchiectases, particularly the relatively new ones that developed as sequels to pulmonary abscess, were cured. In a material of fifty cases, complete anatomic cure was obtained in 14 per cent and improvement in 80 per cent, while in 6 per cent the treatment was a failure. Discussing the use of bronchoscopy in pulmonary tuberculosis, the author says that it was long regarded as inadvisable. His observations do not bear this out, except that he advises against it during acute exacerbation and hemoptysis. Bronchoscopy gives exact information about the condition of the tracheobronchial tree and it may be of therapeutic value in the removal of intrabronchial tuberculous formations or in the aspiration of a complicating suppuration.

Chloride Content of Blood in Tuberculous Meningitis.—Martin and his associates investigated the chloride content of the cerebrospinal fluid and of the blood in patients with tuberculous meningitis. On the basis of their observations, they reach the following conclusions: 1. There is a relationship, but not a mathematical one, between the chloride content of the cerebrospinal fluid and that of the blood. 2. The decline in the chloride content of the cerebrospinal fluid during meningitis is explained by the reduction of the blood chloride. This decline, which is particularly great in the course of tuberculous meningitis, is explained by the considerable hypochlor-

V 107
1936

emia, which attains values that are exceptional for clinical conditions. 3. Parallel with the hypochloremia there appears in tuberculous meningitis a hypochloruria, which in some cases may have diagnostic value. 4. The reduced chloride contents of the cerebrospinal fluid and of the blood in tuberculous meningitis are not the result of a loss but rather the consequence of a retention of chlorides in the tissues.

Minerva Medica, Turin

1: 585-608 (June 23) 1936

Tuberculosis in Prostitutes. F. B. Omizzolo.—p. 585.
Roentgen Aspects of Collapsed Lung Following Artificial Pnemothorax. L. Menozzi.—p. 590.
*Vagal Mechanism of Hypoglycemia Secondary to Administration of Hydrochloric Acid by Mouth. F. Romeo.—p. 596.

Hypoglycemia Secondary to Administration of Hydrochloric Acid.—Romeo made determinations of glycemia in patients suffering from hypochlorhydria or anachlorhydria but who were otherwise normal. All determinations were made on patients with a fasting stomach and repeated every fifteen minutes during the two hours following administration of a certain treatment that varies in the three different days of the test. The treatment consisted in oral administration of 150 cc. of a 6 per cent hydrochloric acid solution on the first and second days. On the second day, however, it was preceded by an injection of 1 mg. of atropine. On the third and last day the patients were given only an injection of 1 mg. of atropine. The administration of hydrochloric acid by itself produced hypoglycemia, which failed to take place when the acid was given after the atropine injection. The simple injection of atropine produced hyperglycemia. The author states that in normal conditions the gastric wall is directly stimulated by hydrochloric acid during the process of digestion. The stimulation produces gastric reflexes, which are transmitted through the vagus nerve to the pancreas. The reflex stimulation of the pancreas results in an increased secretion of insulin by which glycemia is maintained within normal limits. The threshold of the production of the gastropancreatic reflexes is lowered in patients suffering from hypochlorhydria, and the reflexes take place by stimulation of a hypochloric gastric secretion. The increased concentration of hydrochloric acid in the gastric secretion, following the administration of the acid, results in the increase of gastropancreatic reflexes, in which hyperinsulinemia and consequent hypoglycemia originate. As atropine paralyzes the parasympathetic, the vagal reflexes fail to reach the pancreas when hydrochloric acid is given after the atropine injection. These facts account for the lack of modification of glycemia and the presence of slight hyperglycemia when the patients were given atropine followed by hydrochloric acid. The presence of hyperglycemia following administration of a single injection of atropine solution points out the part of the blockage of the vagal reflex in the production of hyperglycemia in these patients. The author states that his results indicate the vagal nature of the gastroduodenopancreatic reflexes.

Policlinico, Rome

43: 1315-1354 (July 20) 1936. Practical Section

*Intraspinal Injections of Phenolsulfonphthalein in Treatment of Endogenous Chronic Arthritis. G. Boschi.—p. 1315.
Influence of Seasons and Temperature on Tolerance of Animals of Laboratory to Fish Poison. M. Pergola.—p. 1318.
Echinococcus Cysts with Neoplastic Degeneration: Case. F. Amantea.—p. 1321.

Phenolsulfonphthalein in Treatment of Arthritis.—Boschi reports satisfactory results with intravenous injections of phenolsulfonphthalein in the treatment of endogenous chronic arthritis. The injection is given by the following technic: A few cubic centimeters of cerebrospinal fluid is removed just before the injection is made. The injection is prepared by dissolving between 3 and 9 mg. of phenolsulfonphthalein in 1 or 2 cc. of double distilled water and then made slightly alkaline. Just before the intraspinal injection is made, 1 cc. of cerebrospinal fluid is withdrawn and added to the solution of phenolsulfonphthalein. The injection produces high fever, which lasts for a few days, in the course of which the development of arthritis is greatly and favorably modified. The painful inflammatory and muscular disturbances subside and the patient completely recovers at the subsidence of the febrile reaction. One injection usually is sufficient, but it is advisable to repeat it within two or three weeks as a consolidation for the results of the first injection. None of the author's patients had a recurrence.

Prensa Médica Argentina, Buenos Aires

23: 1463-1516 (June 17) 1936

*Allergic Gastropathy with Pyloric Syndrome. C. Bonorino Udaondo and L. V. Sanguinetti.—p. 1463.
Rheumatic Fever: Forms and Treatment. J. J. Beretervide.—p. 1467.
Dystopia of Ascending Cecum: Cecum in Left Hypochrondrium; Case. Teresa Malamud.—p. 1473.
Changes of Vision by Lesions of Left Occipital Lobe. M. Balado, E. Adrogué and Elizabeth Franke.—p. 1475.
Table for Instruments to be Used in Operations. V. J. Bertola.—p. 1500.
Question of Pneumoperitoneum in Pulmonary Tuberculosis. S. Diaz Malaver and A. O. Purnik.—p. 1500.
Uremia in Chloropenia Complicating Gestosis. J. C. Lascano.—p. 1503.

Allergic Gastropathy with Pyloric Syndrome.—Bonorino Udaondo and Sanguinetti's patient, aged 29, suffered from asthma in childhood. At present he was suffering from urticaria and pain in the epigastrium and a condition that gave the clinical and roentgen picture of complete spasmodic occlusion of the pylorus. Injections of 0.5 mg. of atropine twice a day controlled the condition in three days, after which he was given 10 cc. of his own blood twice a week until he had received fifteen injections. One year later the disorder recurred, but after the patient had been treated by the same method as before it subsided. After this the patient was successfully treated by nonspecific sensitization with epinephrine, peptones and a milk diet. The authors state that calcium, atropine and epinephrine treatments are useful as coadjuvants of allergic gastropathies but that desensitization does not give the best results in controlling the allergic condition. Nonspecific sensitization by autohemotherapy, protein therapy and pepsin therapy, in association with drugs regulating the sympathetic system and exclusion of certain foods from the diet, are of benefit to the patients. However, more interesting and promising are the results of specific sensitization as reported by Thiers and Chevallier in the *Presse médicale*, May 2, 1936. The treatment, in short, consists in the subcutaneous injection of an antigen obtained by ultrafiltration of the substance to which the patient has an allergic reaction. This substance is removed from the stomach by catheter one hour after having been ingested and then prepared by ultrafiltration, dilution of the ultrafiltrate in artificial serum, and neutralization and finally tyndallization of the product obtained. This treatment produces specific sensitization.

Semana Médica

43: 1949-2020 (June 25) 1936. Partial Index

Acute Anterior Poliomyelitis: Problem of Contagion. R. Cibils Aguirre.—p. 1949.
Grave Ulcerous Colitis: Technic of Ileostomy. R. Finochietto.—p. 1958.
Purulent Pleurisy in Infants: Cases. M. J. Del Carril and I. Diaz Bobillo.—p. 1974.
*Early Clinical Diagnosis of Tumors of Testicle. G. Iacapraro.—p. 1981.
Cranial Trauma: Surgical Treatment. Surgeon.—p. 2003.
Influenzal Polyneuritis with Acute Ataxia: Cases. A. Cicinelli and M. Ilarri.—p. 2006.

Diagnosis of Cancer of Testicle.—Iacapraro states that early in the development of testicular cancer there is an asymptomatic period characterized by the presence of a small zone of induration in an almost normal testicle with normal epididymis, spermatic cord, tunica vaginalis and scrotum. As the induration may also be caused by syphilis, the failure of intense antisyphilitic treatment, for about ten days, indicates immediate surgical examination of the testicle, which is made under local anesthesia and includes small incision of the scrotum, exteriorization of the testicle, small incision of the tunica vaginalis and visual examination of the tunica albuginea, which in testicular cancer is abnormally vascularized. The diagnosis of tumoral testicle is made by the lack of adhesion of the tunica vaginalis to the testicle and the normal condition of the membrane and of the epididymis, detected by pinching these structures between the thumb and the forefinger. If there is no abnormal vas-

cularization of the tunica albuginea, exploratory orchotomy and biopsy are indicated. Immediate castration is indicated (1) if the tunica albuginea is abnormally vascularized and (2) in cases of enlarged testicle the size and character of which were not modified by intense antisyphilitic treatment. The author emphasizes the importance of early diagnosis and treatment of testicular cancer because the development of the tumor is simultaneous with that of metastases to the semilunar and aorticorenal ganglions through the lymphatic routes; as soon as ganglionic metastases exist, treatment is useless. Sometimes roentgen irradiation results in reduction of the tumor and its complete disappearance, but it does not modify the course of progressive cachexia. Roffo's test gives only 50 per cent of positive results in cases of testicular cancer. The patients in the author's group were seen late in the development of cancer, when the tumor was already present and supra-abdominal adenopathies were manifested; that is, at a time when satisfactory results are not obtainable.

Deutsches Archiv für klinische Medizin, Berlin

179: 1-112 (May 30) 1936. Partial Index

*Leads from Thoracic Wall in Clinical Electrocardiography. H. Hecht. —p. 1.

*Qualitative and Quantitative Thrombocytic and Leukocytic Pictures in Tetanus. J. Arneth.—p. 51.

*Tumor Cells in Sternal Punctate: Demonstration of Metastases of Malignant Tumors in Bone Marrow. K. Rohr and R. Hegglin.—p. 61.

Bilateral Thrombosis of Renal Veins in Adults. L. Heilmeyer and O. Lippross.—p. 80.

Rest Carbon and Some Carbon-Containing Substances in Deproteinized Gastric Juice. F. Diehl.—p. 86.

Total and Neutral Chloride Contents of Gastric Juice. L. von Berkesy. —p. 99.

Leads from Thoracic Wall in Clinical Electrocardiography.—Hecht shows that a number of electrocardiographic curves obtained from the customary leads cannot be subjected to an exact clinical evaluation. The question arises whether with leads from the thoracic wall it will be possible to explain these obscure conditions. Of the various systems that have been devised recently to take leads from the thoracic wall, the author considers that of Wilson the best and he suggests that a fourth and fifth lead be added to the customary three. He regards as especially suitable for the leads (1) the third rib at the right sternal edge (fourth lead: near the right side of the heart, over the base and near the auricle), (2) the sixth intercostal space in the left anterior axillary line (fifth lead: near the left side of the heart, over the apex and distant from the auricle). The author found that, with the aid of these two leads, normal hearts always produce the same typical curves, regardless of whether they are of the levotype, the dextrotype or of the normal axial position. The pathologic heart, however, shows over the thoracic wall entirely different conditions. Thus it is always possible to differentiate the "predominating curves" into those of simple deviation of the axis of the heart of normal persons and those indicating pathologic changes of the myocardium in patients with heart disease. The fourth lead is near the auricle, whereas the fifth lead is nearly a pure ventricular electrocardiogram. Beginning changes of T and of ST waves, for instance in auricular fibrillation, can be clearly demonstrated in the fifth lead. In addition to this, the new leads make it possible to differentiate more clearly the onset and extent of the toxic impairment of the myocardium (digitalis). The fourth lead, which is near the auricle, demonstrates clearly biphasic P waves. In twenty-two patients in whom the electrocardiographic aspects conflicted with the clinical examinations the new leads clarified matters in that they revealed conditions which corresponded to the clinical aspects.

Thrombocytic and Leukocytic Pictures in Tetanus.—Arneth maintains that there exists in tetanus no neutrophilic stage of defense with deviation to the left. This indicates that the toxin of tetanus (in contradistinction to most other infectious diseases) has no "neutrotropic" affinity. The qualitative blood picture of the lymphocytes shows likewise a different behavior in tetanus than in the other infectious diseases in which they usually show a deviation to the right. In tetanus, the lymphocytes show, in contradistinction to the neutrophils, a decided deviation to the left, usually with simultaneous increase in their absolute values. The author describes the behavior of the thrombocytes in several cases of tetanus. His studies on the thrombocytes revealed that the toxin of tetanus does not cause great qualitative changes. There is only a slight deviation to the left (in the direction of the young forms), in that the larger roundish forms and the simple longish forms show a slight increase. In addition to this there is a deviation to the left as far as the size of the thrombocytes is concerned ("macroreaction").

Tumor Cells in Sternal Puncture.—Rohr and Hegglin say that in their study of bone marrow specimens, which were obtained by sternal puncture, they often observed cells and groups of cells that are found neither in the normal marrow nor in the marrow of patients with diseases of the blood. Careful studies revealed that some of these cells had the characteristics of tumor cells. The authors resorted to puncture of the sternum in seventy-four cases of malignant tumors, of which twelve showed metastases in the bone system. In ten of these twelve the sternal punctate contained tumor cells, but in the two other cases the demonstration failed, in spite of the fact that the necropsy demonstrated sternal metastases. The authors classify tumor cells in the sternal punctate in the parvicellular and macrocellular types. Parvicellular types are found especially in cases of bronchial carcinoma, macrocellular types mostly in carcinomas of the prostate and of the stomach. However, the tumor cells in the sternal punctate permit no definite conclusions as regards the location of the primary tumor.

Jahrbuch für Kinderheilkunde, Berlin

146: 293-348 (May) 1936

Further Studies on Werlhof's Morbus Maculosus. E. Schiff and C. Hirschberger.—p. 293.

Cevitamic Acid Metabolism in Children. F. Widenbauer.—p. 297.

*Reticulocyte Count in Blood Diseases During Childhood. W. Heuberger. —p. 311.

*Clinical and Etiopathogenic Aspects of Chorea Minor. O. Krönig.—p. 329.

Reticulocyte Count in Blood Diseases in Children.—According to Heuberger, the clinical significance of reticulocytes is still in dispute, but the majority of investigators agree with Naegeli, who sees in their appearance the most reliable and earliest sign of a hyperfunction of the bone marrow. In accordance with this they are regarded as one of the most important criteria of blood regeneration in anemias and of the regenerating action of various physical, hormone and chemical therapeutics. Following a discussion of the factors that increase the reticulocytes, of the morphologic characteristics of the reticulocytes and of the technic of staining and counting them, the author gives his attention to the various disorders of childhood, in which the regenerative activity is indicated by fluctuations in the number of the reticulocytes. First he discusses cow's milk anemia, giving the clinical history of two typical cases. In one case the initial value of the reticulocytes was relatively high and, in accordance with this, the increase during the process of recovery was comparatively slight. In the other, rather mild, case the stimulus seemed too slight to tax the reticulocyte reserves noticeably. The author discusses a case of nonregenerative anemia in idiocy. The anemia developed after several years of an exclusive cow's milk diet, the child refusing any other food, and terminated fatally. In this case the number of reticulocytes was comparatively small (only 15 per thousand before death). The author thinks that the prolonged existence of the cow's milk anemia and the extreme depletion of the iron depots was the reason the anemia assumed secondarily a nonregenerative character. In goat's milk anemia he found that blood regeneration was earlier and more severely inhibited than in feeding with cow's milk. Goat's milk anemia responds noticeably to liver therapy, and the rise in reticulocyte values is occasionally greater than during the remission in pernicious anemia. In a case of anemia resulting from nutritional disturbances, a considerable increase in reticulocytes was observed simultaneously with the improvement in the dyspepsia. In celiac disease, although the anemia was rather mild, there was a considerable increase in reticulocytes soon after the treatment was begun. In postinfectious anemia the improvement was likewise accompanied by a rise in the reticulocyte count. Observations in cases of hemolytic icterus and hemolytic anemia corroborated reports in the literature in that extremely high reticulocyte values were noted. The author says that pernicious anemia is the only type of anemia in which the

V 107
1936

reticulocytes do not show higher values. However, as soon as remission sets in they increase greatly. In a case of lymphatic leukemia that terminated in death the reticulocyte count was low (12 per thousand) in spite of the severe anemia that existed. In children with exudative lymphatic diathesis the reticulocyte count, like the anemia, remained stationary for a considerable period.

Chorea Minor.—In a study of 122 cases of chorea minor, Krönig reached the following conclusions: 1. Chorea minor is a neuro-infection of independent etiologic significance. 2. The viruses of chorea and of rheumatism are related or even identical. This is indicated by the frequent concurrence of chorea and rheumatism, the great incidence of the disorders during the spring months and in children between the ages of 8 and 12 years, the pathologic changes in the heart and pharynx, identical blood pictures and Aschoff's nodules. 3. In consideration of the uncertainty and variety of the bacteriologic observations in chorea minor, it is impossible to speak of a specific organism for this disorder. 4. The rheumatic virus has the greatest choreogenic action, but other viruses may cause chorea by their exacerbating action on rheumatism. Toxic chorea is a choreatic syndrome that can be produced by various toxins. 5. The reaction of the nervous system that is the basis of the development of chorea minor is of an allergic nature, as in the case of rheumatic infections. 6. Predisposing factors for the development of chorea minor are heredity, poor living conditions, tonsillitis and other conditions that reduce the resistance of the organism. 7. The chorea virus is characterized by considerable dispersion, adsorption and neurotropism. The dissemination of the virus in the central nervous system is possible in two ways, by the cerebrospinal fluid and hematogenously. 8. In chorea minor the process is not limited to the striatal apparatus and the cerebellar tract but spreads to the entire nervous system, cerebral cortex, cerebellar system, brain stem and nerve trunks. 9. The hyperkinesis is caused by the action of the virus, the shifting of the threshold for motor stimuli and the constitutional characteristics of the organism. 10. In addition to the infectious cause, a hormone factor plays a part in the pathogenesis of chorea minor (high incidence of the disorder in girls, in pregnant women and during the spring months). 11. The therapy of chorea minor is anti-infectious, sedative and symptomatic.

Zentralblatt für Gynäkologie, Leipzig

60: 1265-1328 (May 30) 1936

*Acute Pulmonary Edema During Birth and Birth Shock. E. Hesse.—p. 1267.
Extra-Amnial Pregnancy. H. Hückel.—p. 1276.
*New Symptom for Retention of Placental Remnant. V. Föderl.—p. 1283.
Corpus Luteum as Corpus Liberum in Abdominal Cavity. K. Podleschka and F. Krieglstein.—p. 1285.
Fibromyoma of Tube. W. Schmisch.—p. 1290.
Unilateral Absence of Adnexa. S. Schwarz.—p. 1292.

Acute Pulmonary Edema During Birth.—Hesse points out that under the term "acute pulmonary edema in pregnancy" a few cases have been reported in which acute pulmonary edema developed with more or less severe symptoms of shock, although there were no signs of cardiovascular disease or of eclampsia. He gives the histories of three fatal cases in which the necropsy revealed acute pulmonary edema. His cases show the following typical symptoms: During parturition or immediately after delivery, there appears a threatening collapse with severe circulatory disturbance, cyanosis, cold sweat, small pulse, dyspnea, pulmonary stasis and pulmonary edema, but the patients do not lose consciousness or have convulsions. The author points out that these symptoms correspond to the clinical aspects of so-called toxic shock. He says that, in contradistinction to shock caused by nervous reflex, secondary wound shock can be traced to the so-called capillary toxins. He thinks that the theory of the elicitation of shock by capillary toxins explains the clinical processes during shock; namely, failure of the circulation in case of intact heart and, in spite of adequate central vasomotor regulation, pallor, dyspnea, pulmonary edema, inspissation of the blood, disturbances in the coagulation and the formation of edema. He points out that, if the reported cases are compared with this symptomatology, acute pulmonary edema during birth can be classified with the conditions of true shock.

Symptom of Retention of Placental Remnant.—Föderl produces maximal contraction of the uterus by intravenous injection of posterior pituitary extract; then grasps the uterus as in Credé's method and by lateral and axial movement of the four fingers that are at the posterior uterine wall a careful palpation is made of the posterior wall, the lateral portions and the tubal corners. The fundus uteri, its anterior wall and the adjoining lateral portions are palpated in such a manner that, while leaving the hands in the position as in Credé's maneuver, the free hand of the examiner explores these portions by lateral movements with the finger tips. If the uterus has the same compactness everywhere, the test is negative. However, if a depressed area or an area of reduced compactness is felt, a placental remnant has been retained. The method permits not only the detection of comparatively small remnants but also their location, and it is not dangerous for the patient. The author concludes that this test should be made in all cases of postpartum atony and whenever the inspection of the placenta makes the retention of a placental remnant seem possible.

Wiener klinische Wochenschrift, Vienna

49: 769-800 (June 19) 1936. Partial Index

*Variability of Intestinal Bacteria and Its Etiologic Significance for Enteral Disturbances in Nurslings and Children. A. Reuss and A. Hassmann.—p. 769.
Injuries by Strong Current and Vascular System. P. Huber.—p. 771.
Serologic Diagnosis of Gonorrhea and Tuberculosis in Existing Seropositive Syphilis. R. Brandt.—p. 775.
Treatment of Syphilis and Gonorrhea with Artificially Produced Fever. W. M. Simpson.—p. 779.
Unilateral Absence of Ovary and Uterine Tube in Light of Biologic and Anatomic Knowledge. J. Lartschneider.—p. 784.
*Clinical Method of Blood Culture for Demonstration of Organisms in Circulating Blood. H. Reichel.—p. 784.

Variability of Intestinal Bacteria in Nurslings.—Reuss and Hassmann describe investigations that caused them to ascribe to the variability of intestinal micro-organisms an important part in the development of enteric disturbances and of the so-called alimentary disturbances in nurslings. They gained the impression that the group of paracoli bacilli which, standing between coli and paratyphoid, probably develop by variation and represent either temporary or permanent modifications, are an important factor in the alimentary-infectious etiologic complex. Their more or less toxic (antigenic) action could be demonstrated by different methods, by cutaneous tests, by the action on the surviving rabbit intestine and by agglutination reactions. Further it was demonstrated by culture experiments as well as by observations on animals that such mutations from the coli to the paracoli group take place within the intestine. There develop pathogenic and contagious modifications, which in turn become the source of ectogenic infections. It is probable that this mutation takes place in nurslings usually by way of the so-called endogenic infection of the small intestine, under the influence of alimentary noxa. For this reason the authors think that the hitherto strict differentiation between nutritional disturbances of alimentary and of infectious origin should be dropped. The ectogenic infection with paracoli strains seems to be most effectively controlled by the administration of lactic acid milk. However, it has yet to be clarified to what extent endogenic mutation can be influenced by the composition of the food. The authors think that the clinical significance of the variability of the bacteria goes far beyond the problem that has just been touched on. They call attention to the sudden appearance of a case of scarlet fever, without any indications as to the source of infection. They think that in such cases the assumption of a modification of a streptococcus strain might be more justified than the search for a bacillus carrier, and that similar considerations might be justified in erysipelas and in diphtheria.

Demonstration of Organisms in Blood.—Reichel shows that for the diagnosis of endocarditis lenta the demonstration of the organisms in the circulating blood (usually Streptococcus viridans) is of great importance. He developed a method that is simple enough to be used by the physician without especial training in bacteriologic studies. Into each of two tubes (filled with 10 cc. of bouillon) he places a blood specimen (1.5 cc. into one, 2.5 cc. into the other). For greater exactness, he

recommends the use of duplicate tubes (four in all). The bouillon tubes are placed in the incubator (at 37 C.). After several hours it can be observed that the erythrocytes have settled in the curvature, without the formation of a solid clot. Above the erythrocytes there is a veil of fibrin. Positive cultures show, after from eighteen to twenty-four hours (in rare cases not until the third day), bacterial cultures in the veil of fibrin. If too much blood has been placed in the tube it forms a clot, and if too little has been used the fibrin veil is absent and the bacterial colonies are on the sediment of erythrocytes. If the correct quantity of blood is used there always forms a fibrin cloud in which the organisms grow into macroscopically visible colonies. After the colonies have grown to maturity, the micro-organisms can be brought to more abundant growth by simply shaking the test tube or by transfer to blood agar or other culture mediums. The author asserts that in cases of endocarditis lenta this procedure gives positive results even if the blood slide remains sterile.

Sovetskiy Vrachebnyy Zhurnal, Leningrad

May 30, 1936 (No. 10) pp. 721-800. Partial Index

Etiology and Pathogenesis of Ulcerative Disease of Stomach. L. S. Girshberg.—p. 729.
*Clinical-Roentgenologic Method of Recognition of So-Called Chronic Colitis. S. M. Ryss and E. F. Rotermel.—p. 733.
Magnesium Sulfate as Narcotic in Psychiatric Practice. E. M. Maidanskiy and A. V. Semichov.—p. 739.
Mycosis of the Nail and Campaign Against It. V. N. Levitan.—p. 744.
Blood Transfusion in Dermatology. E. S. Kalkind.—p. 750.
Treatment of Enterobiosis. V. Tarasov.—p. 752.

Study of Chronic Colitis.—Ryss and Rotermel present a clinical and roentgenologic study of 100 cases of chronic colitis. A careful history, palpation of the intestine, examination of feces after a three-day diet of Schmidt including the determination of ammonia and of organic acids, and a roentgenologic study of the mucosal relief of the large intestine according to the method of Knothe were carried out in each case. The authors divide their material into three groups: (1) dyskinesia, (2) colitis and (3) enteritis. They designate as dyskinesia a syndrome characterized by motor disturbances of the intestine without an accompanying morphologic alteration of the mucosal relief. In a group of forty-four patients presenting dyskinesia with a duration of the condition of from one to ten years, thirty-four suffered from obstinate constipation; in seven constipation alternated with diarrhea, in one there were periodic diarrheas and in two the intestinal habit was normal. Thirty-two had attacks of colic. Functional disturbances of the vagal-sympathetic nervous system were present in twenty-eight. Feces were normal in thirty-four. Roentgenologic studies of the mucosal relief of the large intestine revealed no pathologic alterations. Thirty-one cases were diagnosed as colitis on the basis of the clinical history, examination of the feces and roentgenologic observations. The clinical symptoms were those of constipation alternating with diarrhea, diarrhea, tenderness along the course of the large intestine—spontaneous or elicited by palpation—splashing sound over the cecum and hypertonic state of the intestine. The earliest morphologic alteration in the intestinal mucosal relief in these cases is a widening of the mucosal folds and loss of autoplastic function of the folds. The cases of acute colitis give a more characteristic picture with irregular interruptions in the markedly widened mucosal folds, fine starlike shadows and niches. The widening of the mucosal folds is caused by edema, while the starlike shadows and niches represent ulcerations. In the third group of enteritis the roentgenologic studies revealed no anatomic alterations in the large intestine, though its behavior was that of the irritable hypertonic type. The authors conclude that roentgenologic study of the mucosal relief is valuable in establishing the segment involved and the presence and the degree of morphologic and functional alterations of the large intestine. The study of feces establishes the degree of functional disturbances of the various segments of the large and small intestine. They suggest that dyskinesia of the large intestine based on functional disturbance of the intestine in the absence of inflammatory alterations of its mucosa be considered an independent clinical syndrome.

Acta Medica Scandinavica, Stockholm

89: 1-228 (June 12) 1936. Partial Index

Gastric and Intestinal Mucus, Its Properties and Physiologic Importance. W. N. Boldyreff.—p. 1.
*Further Experiments with Method to Secure More Abundant Growth of Tubercle Bacilli. G. Wihman.—p. 28.
*Liver Diuresis as Result of Rhythmic Function of Liver. F. Gerritzen. p. 101.
Pathophysiology of Obesity. S. Leites and A. Agaletzkaja.—p. 199.

An Abundant Growth of Tubercle Bacilli.—After mentioning the disadvantages of other methods that are used for the purpose of obtaining a more abundant growth of tubercle bacilli, Wihman describes his own method as follows: The ordinary centrifugation tube is replaced by an especially constructed larger one, which has a flat bottom and a bottom plate that is used as a slide. This round slide is placed on the bottom of the centrifugation tube before the fluid is poured in. Following centrifugation, the fluid is poured off in such a manner that the tube is brought slowly into the horizontal position. As a rule, the round bottom slide likewise falls into the horizontal position (that is, with the top downward). If the slide should stick to the bottom it can be loosened with a platinum wire. The round slide is taken out and stained in the usual manner according to Ziehl-Neelsen. During microscopy it is placed on an ordinary slide. Sputums can be examined with this new method, provided they are first treated with antiformin or some other agent of homogenization. Comparative studies on twenty specimens of sputum proved the superiority of this method over the older ones. The author says that the round slide can be used also for other bacteria. In this connection it is pointed out that the round slide on the bottom of the centrifugation tube had been used earlier by an Italian author in the examination of the cerebrospinal fluid in chronic diseases of the central nervous system, in which the form elements are found in small numbers. The author points out further that he found why the methods that are to secure a more abundant growth of bacilli often give unsatisfactory results. He observed that the sputums contain fatty substances which, on account of their lower specific gravity, rise to the top and carry the bacilli with them. On the basis of this fact, he developed a simple method for obtaining a more abundant growth of bacilli. He places the sputum in the incubator (at 37 C.) until it is autolytically dissolved. Then it is poured into a glass cylinder and several hours later the cylinder is placed in a water bath of 80 C., which favors the rising of the fat to the surface. Following this, several loopfuls are taken from the surface layer and are placed on a slide for examination. The author recommends the combined use of centrifugation and the surface layer method.

Rhythmic Function of Liver.—Gerritzen points out that, on the basis of animal experiments and of clinical observations, Forsgren advanced the hypothesis that the liver functions rhythmically, there being a rhythmic alternation between its glycogen storage and its bile secretion. Forsgren found that, when the glycogen content of the liver increased by 1 Gm., the weight of the liver increased by 4.3 Gm. From this fact he concluded that, along with the glycogen, water is stored. This conclusion was confirmed by the microscopic picture of the liver in the various stages of function. During the period of predominating assimilation, glycogen and water are stored; during the dissimilation phase, the glycogen disappears from the liver and water is given off at the same time. In answer to the question as to what happens to this water, the author says that it may be assumed that it will be excreted by the kidney, in that it acts as a solvent for the dissimilation products that are excreted in the urine. He made seventy-two experiments on fifty-seven persons, who drank 75 cc. of water every hour and whose urine was measured every hour for twenty-four hours or longer. It was found that the rhythmic function of the liver is reflected in the diuresis. The diminutions in the diuresis, which occurred at 9 a. m., 1 p. m. and 6 p. m., the author ascribes to the intake of food, because the food to be dissolved takes water from the organism, this water being detracted from the diuresis. Later experiments (on thirty-five persons) proved that the meals did in fact have this influence on the diuresis. The author concludes that his experiments proved that the rhythmic function of the liver, which Forsgren proved to exist in animals, exists also in human subjects.

V 107
1936